



THE BEGINNING

EARLY GAME DESIGNS



SOURCES

Elite: Dangerous Web Page
<http://elite.frontier.co.uk/>

Frontier Developments Web Site
<http://frontier.co.uk/>

Elite: Dangerous forums
<https://forums.frontier.co.uk/forumdisplay.php?f=29>

Elite: Dangerous Newsletters
[http://us2.campaign-archive2.com/home/
?u=dcbf6b86b4b0c7d1c21b73b1e&id=eb767c006f](http://us2.campaign-archive2.com/home/?u=dcbf6b86b4b0c7d1c21b73b1e&id=eb767c006f)

Sidewinder owners manual
elite.frontier.co.uk/downloads/Sidewinder_Owners_Manual_WIP.pdf

Elite: Dangerous online store
<https://store.zaonce.net/>

Frontier Developments youtube channel
<https://www.youtube.com/channel/UCd1Xmm1TFBD-IfZUWaWf7EA>

Frontier Developments Official Twitter
<https://twitter.com/frontierdev>

Elite Dangerous Official Facebook Page
<https://www.facebook.com/EliteDangerousOfficial>

Frontier Developments Official Facebook Page
<https://www.facebook.com/FrontierDevelopments>

© Frontier Developments plc. All rights reserved, 2014

'ELITE' and the Elite and Frontier logos and Elite: Dangerous are registered trademarks of Frontier Developments plc. All rights reserved.

The Beginning was created using assets and imagery from Elite: Dangerous, with the permission of Frontier Developments plc, for non-commercial purposes. It is not endorsed by nor reflects the views or opinions of Frontier Developments and no employee of Frontier Developments was involved in the making of it.

© Kornelius, design and layout, 2014, contact: forger@inbox.lv, more ebooks



PLAY YOUR WAY

Whether you want to trade for profit between systems, take part in multiplayer mission alliances, free-for-all group battles and team raids to bring down planetary economies. Tip the balance of power in the galaxy, or simply explore the wonders of the universe and face the unknown... it is up to you.

Your second-to-second actions could have you taking the roles of trader, pirate, bounty hunter, leader, team player, opportunistic assassin, grand schemer, and more. You are at the centre of the action any time, any place and any way you choose – each action has a consequence, and influences the galaxy around you.

Starting with a few credits and a basic starship, carve your own path through the richest, largest gaming sandbox ever created, set against a backdrop of raw anarchy, galactic powerplays and intrigue. Do whatever it takes to upgrade your ship's hull, engines, weapons, defences, cargo hold; even the ship itself, constantly improve your capabilities and influence on your journey towards the most coveted rank in the history of gaming – 'Elite'.

Fight, trade, hunt your way across a giant galaxy of 100 billion star systems. You can make money from trading goods between the many star systems, by destroying pirate ships and collecting bounty, or even by attacking traders and collecting their cargo (which in turn will get a bounty on your head!). There are missions too, and exploration. Play one way or in a combination of ways. Upgrade your ship and specialise in one activity – have a trader with a huge cargo bay, or use the space for weapons and manoeuvrability.

REAL FREEDOM

Go where you like, be what you like – pirate, bounty hunter, trader, assassin, or a mix of all of these.

TRADE: Buy low, cross dangerous space lanes, evade or destroy pirates en route, then sell high, if you make the journey!

FIGHT: Take on the pirates or be one yourself.

PROGRESS: Get your pilot rating all the way from "Harmless" to "Elite".

EXPLORE: Head out to the far reaches of space and discover amazing sights.

MULTIPLAYER: And the best part – you can do all this online with your friends, or other "Elite" pilots like yourself, or even alone. The choice is yours...

THIS IS JUST THE BEGINNING

The first release of Elite: Dangerous will not mark the end of development.

We intend to continue expanding the game both with new content and new features. A good example of this is planetary landings. We have an ambitious goal for landings to include new gameplay and a rich variety of worlds to explore. To achieve our goal we want the planets to come to life. We also want to add the ability to leave the ships so you can explore space stations or board enemy vessels or even just to look around your own.

We intend to release small, free updates after launch, but major expansions including rich new features will be charged for, unless you have bought the expansion pass, or are one of the Kickstarter backers at the appropriate tier.

CONTENTS

FREEPORT SHIPYARD BROCHURE	4
MULTIPLE SHIP OWNERSHIP	6
SHIP HEALTH	8
THE FRAME SHIFT DRIVE	12
DOCKING AT SPACE STATIONS	22
THE ART OF DOCKING	28
AUTOMATED DOCKING	30
SHIELD SYSTEMS	32
SENSOR MECHANICS	34
FUEL MODULE	38
BASIC SHIP CREW FUNCTIONALITY	42
WINGMEN	44
PERSISTENT NPC'S	48
DEATH PENALTY RULES	50
REPUTATIONS	52
PILOTS FEDERATION RANKINGS	56
INTRODUCING THE GALACTIC POWER BLOCS	58
COMMUNICATION INTERACTION	60
GROUPS	62
PLAYER LOG	64
TRADING	66
PASSENGERS IN ELITE: DANGEROUS	68
EXPLORATION	70
MINING	74
MINING PROCESS	76
SALVAGE RULES	78
KEY CHARACTERISTICS OF A BOUNTY HUNTER	80
CRIME LIST	82
SLAVERY AND THE EMPIRE	86
GALAXY MAP	88
BACKGROUND SIMULATION	92
ELITE DANGEROUS – FACTION CAUSES AND THE BACKGROUND SIM	98
NEWS FEEDS AND STATUSES	100
SIDEWINDER 'CLASSIC NAVY EDITION'	104
OWNER'S MANUAL	
MOSTLY HARMLESS ANSWERS	

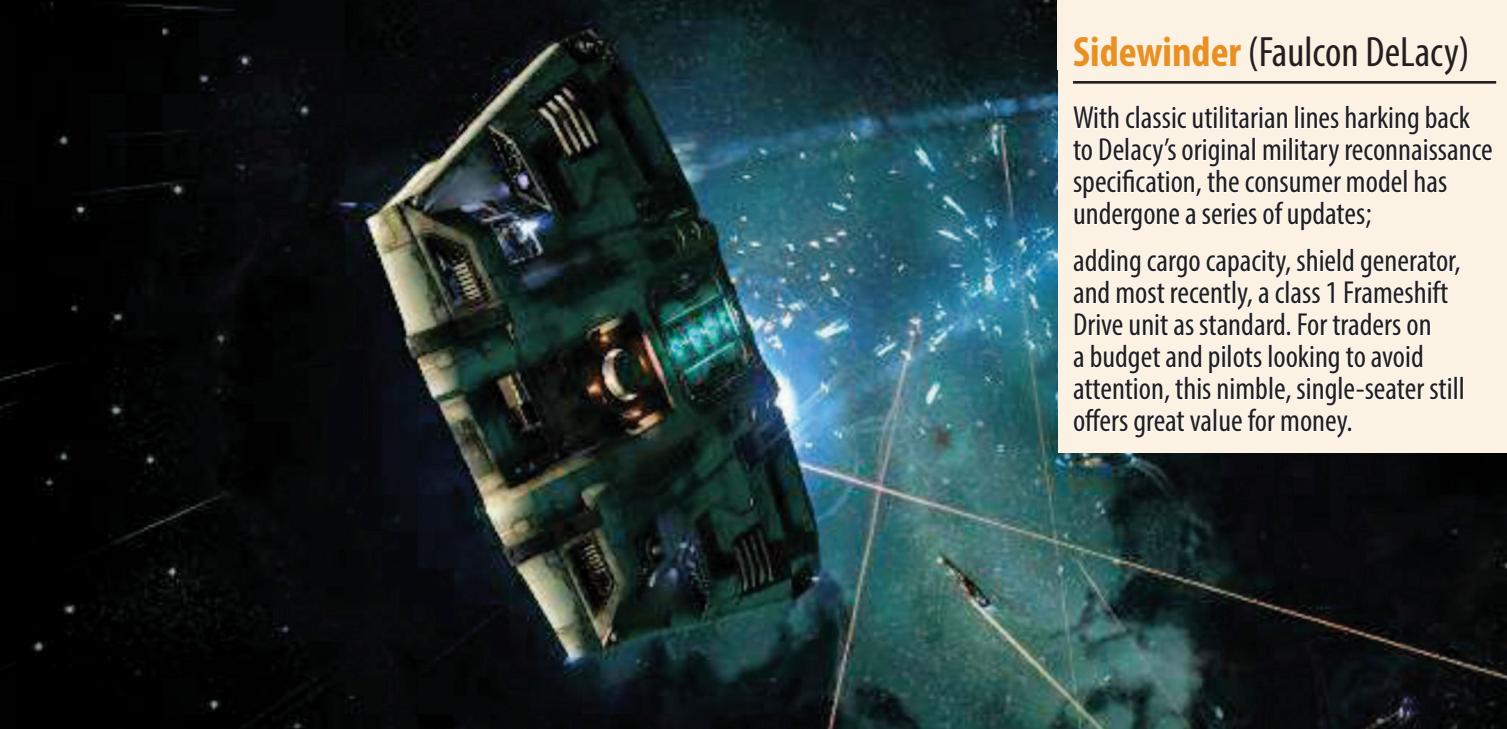
FRONTIER DEVELOPMENT ELITE TEAM

Huge thank you to community member Psykokow, who sent our Elite team 'Thargoid and Fer-De-Lance' mugs this week! In celebration of this act of kindness, here is a photo of us modelling our new mugs for your viewing pleasure!



Sidewinder (Faulcon DeLacy)

With classic utilitarian lines harking back to Delacy's original military reconnaissance specification, the consumer model has undergone a series of updates; adding cargo capacity, shield generator, and most recently, a class 1 Frameshift Drive unit as standard. For traders on a budget and pilots looking to avoid attention, this nimble, single-seater still offers great value for money.



Eagle (Core Dynamics)

The Eagle has a chequered history, covering multiple manufacturers and costly redesigns. This latest model seeks to redress the balance, improving offensive capacity by adding a third hardpoint whilst simultaneously increasing cargo capacity to 4 units. This configuration is catching the eyes of government officials; the unashamedly aggressive design is seeing growing usage as a first response authority vessel in many systems.



Cobra Mk III (Faulcon DeLacy)

Despite its age, the Mark Three is consistently listed as one of Faulcon DeLacy's most successful production ships. In its long life, surprisingly little has changed, testament to the quality design decisions that shaped its inception. The current model allows for a thirty six canister cargo capacity and quad hardpoint configuration, allowing the Cobra to retain its status as a top tier multipurpose vessel for the lone agent.



FREEPORT SHIPYARD BROCHURE



Type 9 (Lakon Spaceways)

Lakon Spaceways have pulled out all the stops with the new Type 9 light freighter; increased structural integrity, improved cockpit visibility and strong defensive potential with quad hardpoints, two of which are turret capable. Of course, the real jewel in the Type 9's arsenal is its phenomenal 440 unit cargo capacity. A serious ship, for serious traders, the type 9 is making a splash in the haulage industry, allowing smaller companies to punch above their weight.



Anaconda (Faulcon DeLacy)

Another Delacy entry, and for good reason; after a massive design overhaul, the Anaconda has improved in almost every respect, eclipsing former glories with brutal efficiency and brute power. Sporting a massive array of hardpoints, a cargo capacity of over 220 units, and one of the most effective standard shield arrays currently available, this monster can be seen in all manner of roles. And if you have the credits, you should be seen it too.



MULTIPLE SHIP OWNERSHIP

In Elite: Dangerous players can purchase and own multiple ships. The player can only pilot a single ship at a time, so other ships they own must be stored somewhere, and made accessible to the player in a believable, fun way.

The player acquires ships from various traders and vendors around the Galaxy:

Players will primarily purchase ships for credits from ship yards

Ships may also be won through bets and competitions

Ships may be given as rewards for events or missions the player completes

When the player has acquired a new ship they will receive the choice to switch to the new ship or continue flying their current ship

• A choice like this is only offered in places where a ship can be stored otherwise the newly acquired ship will be somewhere else waiting for the player to go pick it up

Players can trade in the ship that they are currently flying when purchasing a new ship

Players will receive a percentage of the value of their ship if they decide to trade in their ship

• This percentage is based on wear and tear a ship can sustain over its career and its current state of maintenance so well maintained ships will have a higher percentage than beaten up ones

Players will lose any cargo they have in the ship if they choose to trade in their ship to buy a new one

• Players will receive a warning allowing them to back out of a purchase and go sell their cargo

FOR THE EMPIRE: EXPANDING THE IMPERIAL FLEET

Through these newsletters we have already shared with you the designs for the Empire's capital ship and short-range fighters. As one of the game's major factions they will also have a range of other ships that make up their fleet. Developing these ships that bridge the gap between fighters and capital ships is something that the team have been exploring recently.

There is a range of different ship classes that can make up a fleet, all designed to fulfil specific roles. With the Federation, Empire and Alliance being such dominant factions in the Elite universe they have the capabilities to fulfil as many of these roles as possible. Whilst not all of these will be present in the game at release, here is the hierarchy of fleet-class ships that are available to the game's major factions:

- **CRUISERS (Battlecruisers, Battleships, Interdictors):** Long range, independent ships that are capable of controlling entire systems. Heavily armed and capable of deploying large fighter squadrons. The capital ships already shown are an example of this class. In the Empire they are usually known as "Interdictors" – named after the first successful class of cruisers. Currently the most common and most successful is the Majestic class – generally referred to as a "Majestic class Interdictor". As ships that can also carry out ambassadorial missions they can be used for 'soft' power projection, as well as hard.
- **FRIGATES:** These are large ships designed for escort duties. The actual vessels vary greatly between navies, but are all designed to engage multiple small, fast enemies (typically fighters and missile swarms) and are loaded with point defence batteries. They will also have some anti-ship capability, but are not designed to go up against other warships.
- **DESTROYERS:** These are anti-warship vessels, but are generally no longer used in the front line, though some are still in service.
- **CARRIERS:** Designed for the deployment of fighter squadrons. Obsolete in the fleets of the major factions due to the popularity of Cruisers, but small navies still make use of them and some have even been converted into transporters.
- **TRANSPORTERS (Couriers):** Armoured warships designed specifically for transporting valuable assets and cargo quickly and safely.
- **CORVETTES (Cutters):** Light multirole warships, capable of recon, incursions and escort missions. These small warships are also popular with smaller factions, organisations and even wealthy individuals due to their adaptability. The Imperial Cutter is a lighter and faster Corvette-class ship, that players will be able to get their hands on in the final game (assuming they can make the right contacts).
- **FIGHTERS:** Small short-range craft that generally cannot operate independently due to having no jump capability. Their main roles include the defense of stations and the large warships that they are deployed from. Commercial fighters are typically jump-capable and are therefore much more flexible than their faction-specific counterparts.
- **DRONES:** Small automated ships that have largely been phased out due to the existence of effective counter-measures.

- Many shipyards have trading points where players can sell their cargo, although rates may be less competitive than at other markets

Alternatively any cargo can be transferred to the new ship if able prior to being sold/disposed of

Fitted equipment will need to be stripped out and stored as cargo for it to be transferred from the old ship to a new one

Any transfers of cargo and/or equipment can be transferred for a fee. If the trade in value of the player's current ship is higher than the value of the ship they wish to buy, they will receive the surplus in credits

- The player will receive a warning when they choose to trade in to ensure they don't trade in a ship by accident

Players can store ships they are not currently piloting

Initially the player will have nowhere to store a ship

The player will be able to rent (or buy) hangar space – for an initial fee, and then a rental. Not all stations will have storage space, and some will be cheaper than others. Storage spaces will come in a range of sizes (s,m,l). There isn't a cap to the number of ships a player can store this way, other than the drain on their cash

A number of different facilities can offer ship storage, with a range of different prices

- E.g. functional – shipyard storage, luxury – High end Storage attached to high end residences in central locations, cheap – warehouses in remote locations

Storage fees are deducted daily from their account, and there is an additional fee in some locations (generally the cheap ones) to retrieve the ship from storage, when the player wishes to pilot the ship again

- The fee increases over in-game time only (i.e. if you're logged off it won't increase)

Players can store their ships at multiple locations

- Registering a new location for ship storage costs a fixed one-time fee
- Once registered a player can visit that location or any other registered storage location they have to arrange ship transfers between them which costs a fee to transport them, based on distance and law level of the intervening route (though the transfer happens magically – perhaps on a giant freighter).

Players can only swap their current ship whilst in a registered storage location

- If the desired ship isn't present then the player must arrange a transfer which costs a fee and takes time based on the distance the transferred ship needs to travel to get to the current storage location
- The same restrictions and pricing as above are applied here too
- Once the transfer is complete the player is notified and is able to dock and swap their ships putting their old ship in storage at that location providing they can also pay the storage fee accumulated for the transferred ship since it went into storage (including all previous storage locations it's been at and transferred from since last flown)
- Cargo and equipment can be transferred for a fee, as with ship purchase.

Players can buy a new ship without trading in their current one but must choose which of the two ships they would like to pilot afterwards

The ship the player chooses not to pilot will have to be sent to any of the player's registered storage location (possibly including the same station they're at)

- If no storage location is registered then the player is forced to register one
- If a storage location is available (or has just been made available as above) it can be selected for the ship to be sent to without needing to pay a transfer fee as this is included in the price of the new ship (i.e. ensures that the player can transfer their ship despite having no money left after the purchase)

Note: It was discussed with the DDF that we would consider giving those who have named a station a voucher for free large ship storage on 'their' station. This could be a nice way to reward our backers in game. ■



SHIP HEALTH

Every ship has a health value representing its hull integrity

If a ship receives more damage to its hull than its hull integrity health value it breaks apart and is destroyed

Larger ships have their hull integrity value split across several hull sections

Once a section receives more damage than its total, further damage to it is reduced and spread to adjacent sections

All ship modules have a health value representing their state of repair

As modules receive damage they increase the probability of malfunctions occurring

When a module's health is reduced to zero it is disabled and cannot be used until repaired at an appropriate dock

- Some modules cause chain reaction damage on nearby modules when they are disabled
- Some modules cause catastrophic failure when disabled, destroying the ship in a fiery nova (the power plant, some exotic modules)

The commander's escape system (in normal mode) automatically engages when there is no possibility of ship recovery (power plant detonation, ship and personal life support failure)

Damage

There are two types of damage: direct damage and fatigue

- Direct damage occurs as the result of weapon attacks
- Fatigue occurs as the result of hazardous environments, ranging from running reactors past safety limits to damaging environments both inside and outside the ship

Both types of damage affect the ship's hull or modules health values

There is one significant difference between the two types of damage: only direct damage can trigger malfunctions in modules

Normally, direct damage from weapons must break a shield before it can attack the hull

Both the hull and shields are able to soak an amount of damage before it is applied

The hull receives an amount of damage that hits it based on its current health (the less damaged the hull is, the more of the incoming damage is applied to it rather than penetrating)

Any remaining damage penetrates through and hits a module in the vicinity of the hull strike



- ♦ If there are no modules in the vicinity of the hull strike, this penetrating damage is wasted
- ♦ Some weapons are penetrators, reducing the amount of damage that the hull receives and pushing more through to modules

Targeting systems dramatically increase the likelihood of targeted modules receiving penetrating damage

Maintenance

Both ship hull and modules can be repaired at most docks for appropriate fees

Repair modules can be fitted in a ship and used to repair modules flagged by the commander in the systems management interface

- ♦ Repair modules are loaded with a finite resource, which can be restocked at most docks
- ♦ Repair modules cannot repair hull integrity

Repair drones can be stored in cargo racks and deployed to repair hull damage to a targeted ship within range (including the commander's ship)

- ♦ Repair drones have charges which can be restocked at most docks

PILOT'S FEDERATION GUIDE: INSURANCE POLICY MEMO

This document is a reminder of your legal rights regarding claims for lost/damaged vessels.

1. You are responsible for the upkeep and maintenance of the insured craft, including all repair costs incurred.
2. Your policy covers your current vessel only. Should you change your craft, your policy will be automatically updated to match the details of the new vessel.
3. Should your vessel be destroyed, your policy entitles you to a fully refitted vessel, providing you credit balance can cover the excess payment
4. The excess payment is calculated based on the value of the vessel and fitted modules.
5. Your premium package covers any class and type of vessel, though claim excess payments will be adjusted accordingly.
6. Your policy does not cover any cargo carried at the time of destruction.
7. Should you be unable to cover the excess payment, your premium package covers the cost of a standard specification Faulcon DeLacy Sidewinder replacement vessel which will be delivered to your starport location.



Malfunctions

As a module's health is reduced there is an increasing chance that it will suffer a temporary malfunction based off the following triggers

- ♦ The module suffers direct damage
- ♦ The module is powered up
- ♦ The module is activated

Malfunctions are temporary debilitating effects

- ♦ The lower the module health the greater the potential severity of malfunction
- ♦ Malfunctions are module specific (e.g. an auto cannon might suffer an ammo feed jam, a sensor unit might display corrupted data, an engine might generate excessive heat)
- ♦ Malfunctions can last for a few seconds to several minutes, based on the effect

Malfunctions always generate visual/audio feedback so that it is clear abnormal behaviours are active

Some malfunctions can be ended early by specific action that commanders can learn (such as switching a module off and back on, refraining from module activation, continuous fire etc.)

Some malfunctions can cause additional fatigue or direct damage to other modules

A manager oversees malfunctions and weights their occurrences to smooth the pacing of multiple malfunctions (reducing the likelihood of triggering too many malfunctions from minor damage)

Most malfunctions can be ended early by repair

Some weapons are specifically designed to increase the chance of malfunction when they deal damage directly to modules

This then, is what we are currently heading towards. Again, the watchwords for us are interesting events and drama, along with clear meaningful choices. It should be fairly clear that destroying a ship is not going to be a single shot affair – taking into account shields, hull and modules there's a fair bit of work to be done (as part of this philosophy you can expect to see NPC aggressors sometimes deciding to break off – victory does not necessarily require a grind until total annihilation). As for malfunctions, well, we like them because:

They can be varied and offer interesting challenges to the commander

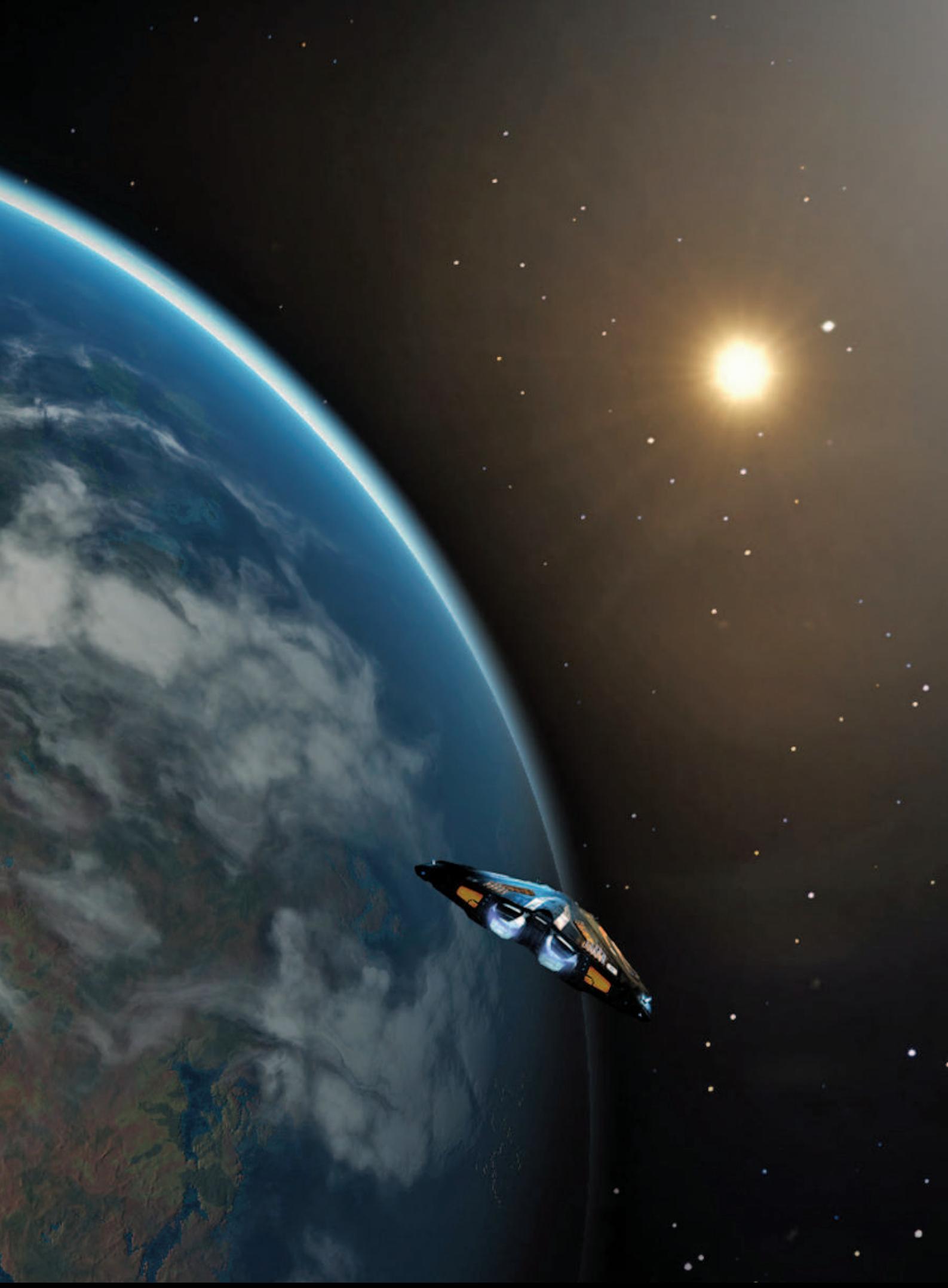
Importantly, a commander can learn what they are and often mitigate their effects or work round them (even choosing different modules in an attempt to control what malfunctions can occur)

They always trigger based on a legible event

They are debilitating, keeping the advantage to the better combatant

Because of their transitory and semi-random nature they keep open the potential for a commander to fight back right to the end

They are easy for us, as developers to tweak, add and remove. ■



SHIP HEALTH 11



1 GLOSSARY

1.1 POWER PLANT

A ship's power plant is an internal module. It consumes fuel and converts it into energy that is used by powered modules when they are turned on.

As each powered module is turned on the power draw of the power plant increases, meaning that fuel is consumed at a higher rate.

Power plants have maximum draw levels; once reached, the commander will have to turn off powered modules to turn on new ones.

1.2 ENGINES

A ship's engines consist of the following elements:

- ♦ One or more powered, internal modules, that consume fuel and generate thrust
- ♦ The greater the thrust produced the higher the fuel consumption
- ♦ A series of external thrusters that direct the thrust to provide ship movement
- ♦ A ship's engines allow it to travel at speeds of several hundred metres per second.

1.3 FRAME SHIFT DRIVE

- ♦ A frame shift drive is a powered internal module. Basically a cut-down version of a hyperdrive, it consumes fuel to allow a ship to travel at a significant fraction of the speed of light.

1.4 HYPERDRIVE

- ♦ A hyperdrive is a powered, internal module. It consumes fuel to allow a ship to perform hyperspace jumps, travelling vast distances (light-years) in seconds, and to frame shift. The hyperdrive is the name given to the whole assembly, but essentially a frame shift drive is an intrinsic part of it.

2 MODES OF TRAVEL

There are three modes of ship locomotion in Elite: Dangerous, allowing commanders to travel around the galaxy. Both super-cruise and hyperspace travel are inertia-less. Both are closely related, and involve shifting the frame of reference such that distances become very much contracted – essentially distorting space-time in the immediate vicinity to achieve this effect. This means people travelling on such a ship do not feel an acceleration when doing so (though that's not to say it doesn't involve jolts and some violent motions so people should be strapped in!):

Conventional Travel: Conventional travel allows it to attain speeds in hundred of metres per second. Conventional travel uses a ship's engines. The following activities are possible:

- ♦ Docking
- ♦ Combat
- ♦ Trading
- ♦ Mining
- ♦ Some methods of exploration

Super-Cruise Travel: If fitted with a Frame Shift drive, a ship is able to travel at speeds approaching significant fractions of the speed of light, colloquially known as super-cruise. The Frame Shift Drive is a discrete, powered module. The following activities are possible whilst at super-cruise:

- ♦ Freeform travel between in-system bodies
- ♦ Freeform high speed orbit around in-system bodies
- ♦ Freeform travel to arbitrary in-system locations
- ♦ High-speed pursuit and artificial mass locking of targeted ships
- ♦ Some methods of exploration

THE

Hyperspace Travel: If fitted with a Hyperdrive, a ship is capable of near instantaneous travel between gravity wells, either within a system or between systems. These journeys are known as hyperspace jumps. A Hyperdrive is an upgraded Frame Shift Drive. As such, it retains all Frame Shift functionality. The following activities are possible:

- ♦ System-to-system jump
- ♦ In-system jump to in-system body

3 THE FRAME SHIFT DRIVE

The Frame Shift Drive (FSD) is a module that has grid, ship class, mass and power requirements like any other module.

IT ALLOWS A SPACE SHIP TO TRAVEL AT SUPER-CRUISE:

3.1 INITIATING SUPER-CRUISE

When fitted, the FSD allows a ship to engage super-cruise:

- ♦ There is a wind up time when engaging the FSD, with associated visual, audio and sensor effects
- ♦ The FSD cannot be engaged when the ship is within a calculated distance of another vessel or structure that has a large mass—the greater the mass the greater the required distance—conventional flight using engines must be used to clear the distance
- ♦ Modules and consumables exist that can delay/prohibit/cap speed and allow FSD engagement, creating an arms race between those who want to engage super-cruise and those who want to prevent them doing so

3.2 TRACKING AND MATCHMAKING

When a ship successfully engages the FSD it is removed from the session and joins a super-cruise session:

- ♦ The act of engaging the FSD leaves a brilliant particle trail that dissipates over time—other vessels which match the position and vector when engaging their own FSD increase their chance of being matched in the same super-cruise session
- ♦ Any players in the session that is left will see the commander having engaged FSD dart off at an incredible speed in their initial super-cruise direction and then disappearing—enabling such a ship to be followed.
- ♦ Targeting a ship which then engages its FSD increases the chance of being matched with the vessel if engaging super-cruise within a window of opportunity

Allies can slave their FSD to guarantee that they enter super-cruise in formation at the same time and in the same session

- ♦ When slaving the FSD, all vessels use the capabilities of the weakest drive
- ♦ The vessel that others slave to has flight control during super-cruise, though slaved ships may break off at any point (and re-slave if they are within a set distance)

As with all matchmaking, there is no guarantee of being successfully matched with a particular session beyond slaving FSDs

3.3 SUPER-CRUISING

Once super-cruising, a commander can employ the following ship systems:

They can linearly accelerate up to the ship's maximum super-cruise speed (though in practice this will almost never be reached) and decelerate down to a standstill (these two rates will most likely be different—it will be easier to come out of super-cruise than enter it), at which point they drop out of super-cruise and into normal space

- ♦ Commanders that drop out of super-cruise far from any gravity well may broadcast their location directly to known ships which can use the data as a hyperspace destination

FRAME SHIFT DRIVE



They can manually control the direction of the vessel

If outfitted with the correct sensors they can attempt to scan for un-mapped celestial bodies, phenomena and other points of interest using associated sensor interface options

They can use long range sensors to track other ships super-cruising nearby

If they have the correct modules or consumables they can attempt to mass-lock a targeted ship or nearby ships, dragging them all out of super-cruise into normal space relatively near each other

- *Ships do not automatically mass lock each other out of super-cruise no matter how close they visually get – the process must be commander initiated*
- *Ships that have a slaved FSD will be dragged out of super-cruise when they are in proximity to a slaved FSD ship that is mass locked, even if they were not targeted themselves*

Whilst in super-cruise a ship with a hyperdrive can engage a hyperspace jump to a gravity well within the system (a micro jump) or to the major gravity well of a different system (a hyperspace jump) assuming they have the fuel

Whilst travelling in super-cruise, the effects of gravity will be accentuated, so travel is both ‘bumpy’ and any gravity well will distort the player’s direction of travel.

3.4 SUPER-CRUISE EXPERIENCE

When travelling at super-cruise the commander pilots the ship using standard controls. They can speed up, slow down, pitch, yaw and roll.

However, several aspects of the flight model are significantly reduced in efficiency; pitch, yaw and roll are much slower.

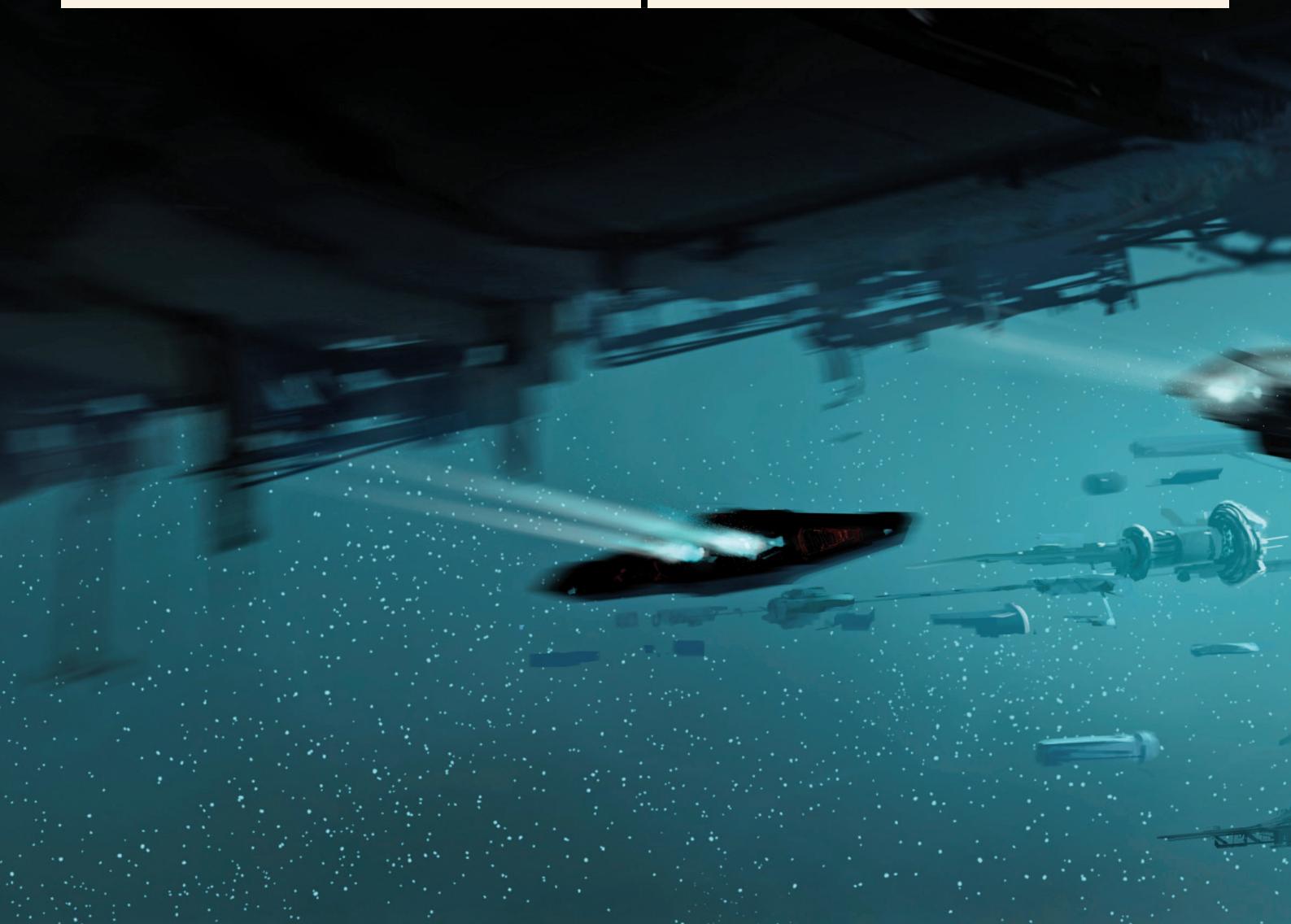
Although the ship accelerates and decelerates at incredible speeds, the range of acceleration and deceleration is such that it takes in excess of twelve minutes to reach maximum velocity. This fact combined with reduced manoeuvrability, places a greater emphasis on planning ahead.

Because super-cruise relies on the frame shift drive rather than engines, manoeuvrability and acceleration are dependent on the capabilities of the frame shift drive, as well as the ship’s construction; some vessels are inherently better suited to super-cruising than others.

When fitting a FSD/hyperdrive module, the various brands and models have different capabilities in terms of cost efficiency speed and resistance to debilitating effects.

Travelling at super-cruise distorts space-time around the ship in a manner that effectively contracts distances – though this effectively greatly increases gravitational effects too. If these speeds were achieved in normal space the accelerations of many hundreds of ‘g’ would turn the occupants into jelly. It also alters the visuals from the cockpit significantly, for example other ships travelling at super-cruise are rendered as distorted flaring lights, visible way beyond normal visible range, and other astronomical effects, like magnetic fields become accentuated too, rendering them visible in many cases.

Travelling at such speeds causes the ship’s HUD to engage a number of additional elements to help the commander correctly pilot the vessel:



All celestial bodies and phenomena within a large distance are enhanced with AR elements, showing distances and collision warnings based on the commander's speed

Other ships travelling at super-cruise within a large distance are also highlighted with AR elements showing distance and direction of travel

- The commander may target these ships as in normal flight – this is a prerequisite for some methods of using optional technology fitted to the ship dragging down ships out of super-cruise

3.5 RISKS OF SUPER-CRUISE

Super-cruising allows a commander to theoretically fly their ship anywhere in a system under manual control. However, there are risks involved with travelling so quickly:

Although ships cannot collide with each other, they can collide with celestial bodies and phenomena

Because the FSD frame-shifts at a constant rate it is possible the player is forcibly ejected from super-cruise while still at a high level of frame shift when approaching a celestial body or phenomena. This can be damaging to the ship (and its contents) – in extreme cases resulting in their destruction.

Manoeuvrability whilst in super-cruise is significantly less effective than under conventional drive, requiring earlier intervention to avoid collisions

Celestial bodies and phenomena are still present regardless of whether a commander's system map knows about them

- When travelling directly towards a known celestial body the ship interface will be able to provide collision course warnings
- Flying close enough to a celestial body, phenomena or point of interest will update the system map, though this will not necessarily leave the commander enough time to react

Atmospheric/surface impacts will cause a ship to drop out of super-cruise – potentially causing damage or destruction to it depending on their degree of frame shift at that point.

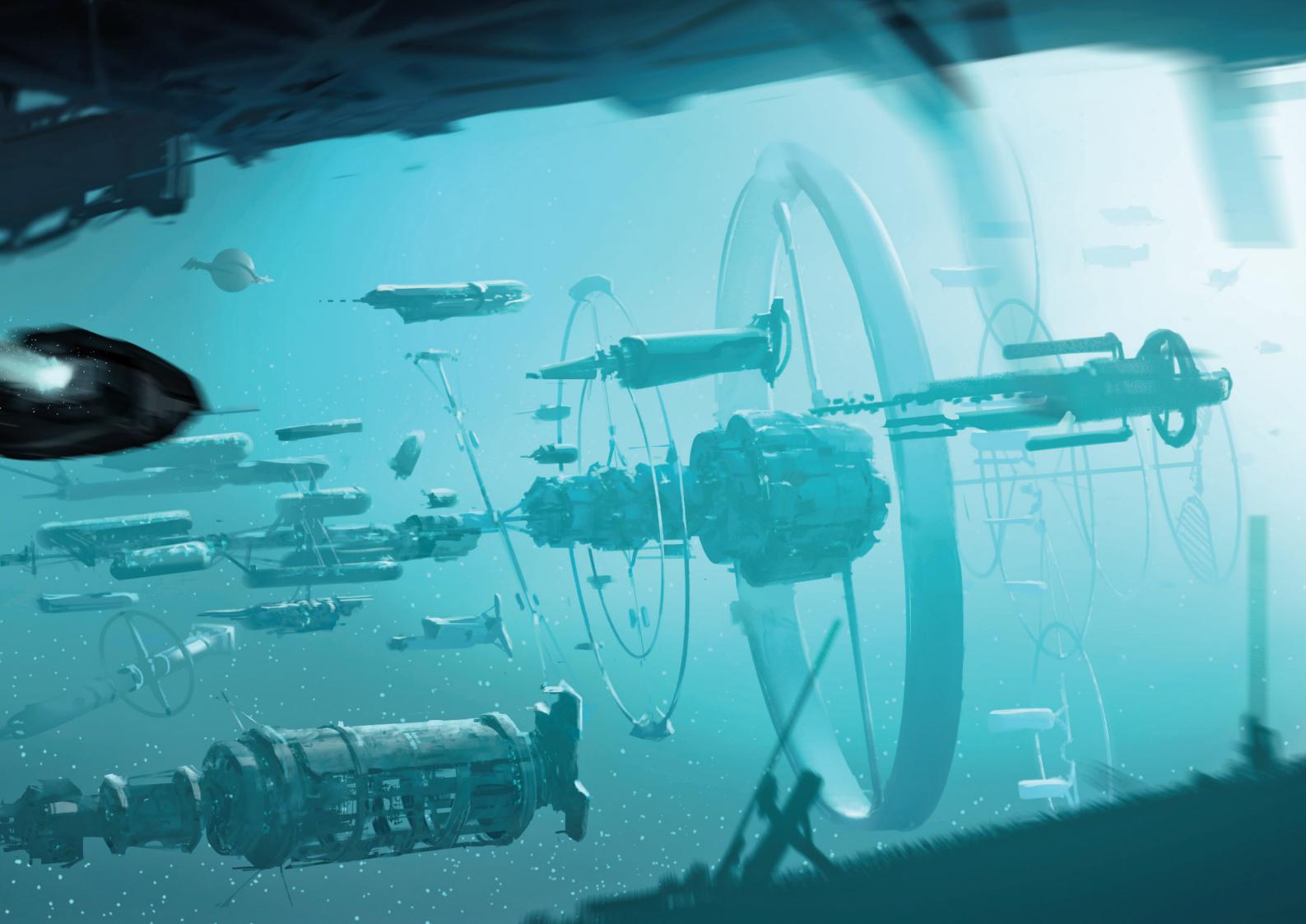
Although the FSD locally distorts space, effectively shrinking distances, it does not affect gravity, so the effect results in apparently massively increased gravitational forces:

- Gravitational influence from locations is significantly extended in both range and strength, dragging the commander's vessel off course, but also allowing skilful slingshots around massive bodies.
- A skilled pilot is able to use gravitational effects to their advantage, skimming around locations to gain additional temporary gains to turning arcs

Super-cruise consumes fuel; running out of fuel will cause the FSD to drop back down into conventional space, potentially leaving the vessel stranded

- Stranded vessels can use their escape pod or begin transmitting a distress signal

Some consumable devices can be deployed by vessels and structures that create a "net" capable of dragging super-cruise vessels down to conventional drive speed if they get too close



4 THE HYPERDRIVE

The hyperdrive is a module that has grid, ship class, mass and power requirements like any other module. As well as allowing a ship to travel at super-cruise, a hyperdrive also allows it to make hyperspace jumps (system-to-system) and micro-jumps (between points of interest within a system).

Whilst travelling at super-cruise a commander may execute any hyperspace jump or micro-jump they have plotted beforehand.

Separate documentation exists covering the hyperdrive, with the following additions:

- When the commander has plotted either a hyperspace jump or micro-jump destination, it will be present as an AR element in the cockpit interface
- When using a hyperspace jump to a system, the ship arrives nearby the largest mass present, normally the most dense star
- A hyperspace jump can only be initiated by a ship already at super-cruise
- A hyperspace destination can be programmed at any time (the ship does not have to be at super-cruise)

Programming of hyperspace destinations can be done by (a) pointing at the destination object and selecting it, (b) using the galactic map and selecting an object, (c) by selecting a destination address that has been stored or sent electronically from another player and (d) by slaving the hyperdrive to another player, flying in formation.

4.1 PLOTTING A MICRO-JUMP

The commander can directly select a known location using the cockpit interface, either before or whilst super-cruising :

The cockpit interface allows the commander to interrogate and select the destination by directly highlighting the location in the star field

Engaging the hyperdrive causes the vessel to micro-jump in a straight line directly to the location, arriving nearby at super-cruise speed

- The destination point is calculated to be at the centre of location on the edge facing the commander (imagine a snooker cue hitting a cue ball dead centre)
- There is some amount of arrival point fudging to maximise the chance of matchmaking with commanders already present at the location and nearby



The commander can use the orrery to plot a more precise micro-jump:

In the orrery view the commander can select a location and move a cursor over its face to pick a destination point

Much like aiming a snooker cue at the cue ball, the commander cannot select a destination point round the back of the location, only to a point that their ship has a direct line of sight to

The commander can use the system map (orrery view) to plot a multi-stage micro-jump, potentially allowing them to travel to locations and destination points that they do not have direct lines of sight to

In the orrery view the commander can select a location and move the destination cursor to the edge of the location's visible face

This triggers a slingshot corridor to be displayed – this is a three dimensional volume that curves and expands around the location

The commander can select a new destination point at any location that can be reached whilst staying within the limits of the slingshot corridor

A micro-jump that contains slingshots is treated as a single journey; the vessel jumps to each slingshot, arriving at super-cruise, realigns for a few seconds then automatically jumps again

However, the game checks all slingshot points when the micro-jump is initiated and is able to determine if the ship should be dragged down to conventional drive speed during the alignment stage

4.2 PLOTTED MICRO-JUMP RISKS

When a commander plots a micro-jump there is potential for the route to become invalid:

Various locations have orbits of different speeds

If the commander plots a route to a location with an orbit, the route may eventually become invalid as the location moves out of alignment with the route

- The system map interface warns of potential miss-alignment issues with a route
- The ship will not be able to initiate a micro-jump with an invalid route.



HYPERSPACE RULES

Before the player can initiate a hyperspace jump they must set the final destination of the journey.



The player selects a destination using a galactic map navigation interface

The destination choice is hard-limited by several factors:

The amount of fuel available determines the maximum distance of a trip

- Ships have an internal fuel capacity – additional fuel can be carried as cargo and transferred to the ship's tank

The basic jump range of the ship's hyperdrive, determines the distance of each step of the trip

- Different hyperdrives have different capabilities
- Jump range
- Fuel efficiency
- Charge time
- Hyperdrives can be replaced with better models to increase capabilities

Jump locations available to their star map determine the route of the trip

The player may also have access to additional information that could inform their decisions:

- Activity heat maps for trade, piracy, conflicts etc.
- Hyperspace tracking/prediction devices to monitor local ship activity

A hyperspace journey may comprise of a number of jumps depending on the distance travelled

When inputting a journey, there may be multiple routes available to choose from

Once a destination has been inputted the hyperdrive can be engaged

Once a journey has been set, the player can engage the hyperdrive: When the hyperdrive is engaged it begins to draw power from the ship's power plant until it is fully charged:



The hyperdrive cannot be initiated if its power draw would make the total power draw of the ship exceed the ship's power plant capacity

- ♦ The player can disable power safeguards to enable the plant to run at over 100%, suffering fatigue damage in the process
- ♦ The player can turn off other powered systems to free up capacity for the hyperdrive

The hyperdrive cannot be initiated when the ship is too close to a celestial body or large man-made structure; the ship must use in-system travel to reach a minimum jump distance

To create a safe transit the hyperdrive must perform real-time changes based on ship's power draw; changes to the ship's total power draw (up or down) slow the charge rate by a percentage value for a duration

- ♦ The percentage value and duration is based on the quality of the hyperdrive

The hyperdrive is sensitive to interference caused by incoming attacks; when an attack impacts on the hull or shields, the hyperdrive's charge rate is slowed by a percentage value for a duration

- ♦ This effect cannot stack with itself

- ♦ The percentage value and duration is based on the quality of the hyperdrive

Special exotic modules can be fitted to ships which when activated interfere with a targeted hyperdrive in range, slowing down charge rates by a percentage value whilst active

- ♦ This effect cannot stack with itself
- ♦ The percentage value and duration is based on the quality of the module versus the quality of the hyperdrive

A hyperdrive module that has suffered damage may suffer a malfunction when initiated

- ♦ The charge rate may be impaired
- ♦ The percentage value and duration is based on the severity of the malfunction
- ♦ The hyperdrive may misfire, becoming inoperable for a short duration whilst it runs diagnostics, after which it can be initiated again
- ♦ The charging process may generate extra heat
- ♦ The hyperdrive may misjump

Whilst charging the hyperdrive generates heat

Once the hyperdrive is fully charged it activates:

The appropriate amount of fuel is removed
The drive discharges all power
The ship enters hyperspace
Time-based effects (charging shields etc.) continue as normal during a hyperspace transition
A residual opening is left, which dissipates over a duration (up to minutes)

After a delay (a few seconds) the ship exits hyperspace at the destination area

If the journey consists of more than one jump the hyperdrive automatically begins to charge for the next jump
The player can cancel/pause the journey at this point

Certain types of hyperdrive can use fuel upgrades, and modules are available to allow normal hyperdrives to use them

Fuel upgrades are carried as cargo units and can be committed to a hyperdrive jump whilst a route is being plotted
Fuel upgrades increase the capabilities of the hyperdrive for a single jump
Fuel upgrades produce dangerous waste as cargo units
These multiple jumps for a journey can go via dark systems, rogue bodies surrounded by lightless, dust-filled space, which will:
Support all sorts of interesting encounters in their own right
Become useful physical star map locations to discover
Allow multiple routes to a destination
Allow players to meet each other far from civilization

There are actions that players can take which directly interact with hyperspace jumps:

Players that have become Allies (an explicit in game selection of a "friends" flag) can slave their ships together and jump as a single entity
All ships involved must fully charge their hyperdrive before the jump is initiated
If any of the ships suffers a misjump, all ships misjump together
Each slave jumping ship must remain within a set range to at least one other slave ship

* If this distance link is broken, the jump is aborted for all slaved ships
For each additional slaved ship the chance of a malfunction causing a misjump is lowered
Ally groups enable the strongest match-making rules, prioritizing the integrity of the group over match ups with other players if it would result in splitting the allies group



Using specialized ship modules a residual opening can be analyzed to determine the exit point of the hyperspace jump

This analysis takes an amount of time
It takes at least as long as the time window for tailgating (so you can't do both)
It must fully complete before the residual opening dissipates to give a result
Analysis of a miss jump gives the original target as the result, with a probability of a misjump based on how quickly the analysis was started after the jump occurred

Ships can target a residual opening and attempt to "tailgate" after the ship that jumped

The tailgater must be in close proximity to the residual opening and activate the hyperdrive



- ♦ The time window for tailgating is a fraction of residual opening's total existence time
- ♦ There is a significant reduction in charge time for tailgating
- ♦ Fuel is expended for the jump as normal
- ♦ If the tailgater does not have enough fuel to reach the destination they misjump
- ♦ If the actual jump range is greater than the tailgater's hyperdrive capability they misjump
- ♦ The closer the residual opening is to dissipating when the tailgate jump is initiated the greater the chance of a misjump
- ♦ The tailgater suffers an amount of hull/module damage during the jump based on how close the residual opening is to dissipating
- ♦ If successful, the tailgater appears very close to arrival point of the tailgated vessel

Special ship modules exist that when active can give brief forewarning of ships about to arrive nearby at a location

Specialised munitions can be obtained which disrupt residual openings, preventing tailgating and analysis

Misjumps have their own set of rules:

Misjumps can result from a number of scenarios

- ♦ A hyperdrive malfunction can result in a misjump
- ♦ A galactic map malfunction can result in a misjump
- ♦ Activating the hyperdrive inside certain space phenomena can result in a misjump
- ♦ Attempting to tail-gate another ship's jump can result in a misjump

A misjump transports the ship to a new destination

This distance between the new destination and the target destination is a random value based on the distance travelled (the longer the jump, the greater the misjump range potential)

The misjump destination may be the outer limits of an inhabited system, or a dark system

- ♦ Such systems may not yet be in the player's galactic map

Very rarely, a misjump can result in turning up somewhere else

After a misjump, the hyperdrive automatically runs a diagnostics test for a duration before it can be charged again

There is no way to force a misjump other than directly sabotaging the hyperdrive module to guarantee a malfunction. ■



DOCKING AT SPACE STATIONS

Docking in Elite has a number of stages to it. This Proposal describes the docking process through each stage, from the player flying outside a station, to entering the station, to successfully docking on a pad at the station.



1.1 REQUESTING DOCKING

Player Aim: To Communicate with their target station and gain permission to dock

The player must Select the station as a target and must open communications

- *The player can only communicate with a station if the station is in range of their communication equipment*

The player selects the 'request permission to dock' option from the communication menu, to request permission to dock at the station

If the player is too far from the station they will be denied permission, and told to close to within 1.5km of the station and request permission again

If the player is currently wanted for crimes against a faction the station is affiliated with the station will refuse to give them permission to dock

- *Below a certain threshold a station may allow a player to dock*
- *The player may have the option to communicate that they are turning themselves in, in which case they will be given permission to dock*
- *Police may be dispatched to the player's location if they're wanted for serious crimes*

If the Player's weapon bays are open they will be informed to close them before approaching the station

The player is directed to fly to the stations entrance and informed to wait for clearance before approaching the entrance

The player is given a waypoint outside the station to fly to (this is the holding area for entering the station)

Once the player reaches this waypoint they are added to the queue of ships waiting to dock at the station

1.2 ENTERING A STATION

Player Aim: Flying through the space station's aperture to the stations interior

When a player is given clearance they are communicated with and informed they have a short window to pass through the stations entrance

- *Player ships are always given priority over AI ship in the waiting list*
- *Players can pay for premium docking rights with some stations to get priority docking*
- *Entering a station when not given clearance causes the player to receive a fine*

When the players window is open the station will open its docking bay doors to allow the player access to the stations interior

The player must fly their ship through the stations aperture and into the station



1.3 INSIDE THE STATION AND LANDING ON A PAD

Player Aim: Navigate the Stations interior and Land on a Landing Pad

When the player is inside the station they will be told which pad they have been assigned to dock on

- The player will be given a waypoint marker in their hud that guides them to the area above their designated pad

Once above the designated pad the player must activate their landing gear to enable the docking GUI

On their main screen the player will be shown GUI showing the horizon, according to the landing pad, and the players height above the landing pad

- This allows players to quickly level their ship to the same orientation as the pad, and easily check their height and orientation at a glance

On a secondary screen the player is shown a downward facing camera, showing the docking pad below

- This camera has an AR overlay that tracks the landing Pad below the player
- The player must keep the pad lined up below their ship and slowly descend onto it

A marker on the front of the landing pad (perhaps a set of marking lights or an advertising billboard) shows the player when they are lined up with the landed pad at the correct height

Once the player has aligned their ship to the landing pad they press a button to trigger magnetizing the pad

- If the player has aligned their ship correctly they will land safely
- If the player is too high off the landing pad the magnetization effect will cause the ship to hit the pad hard and will damage the player's ships landing gear
- If the player does not trigger the magnetization soon enough their ship will graze the landing pad and damage the players ship

The Players ship is now docked

CONSTRUCTING STATIONS THROUGH THE EVENT SYSTEM

One exciting feature that we hope to implement is the opportunity for players to be able to view a station in its various stages of construction, such as in the image above. A precursor to a new station would be the arrival of a large ship that would fulfil the role of a temporary station, or colony ship to a specific system. This would then act as the primary hub for trade and missions, until work on an adjacent static station was complete.

The construction of a station would be managed by the events system and as such would generate missions and opportunities for the players, allowing you to help or hinder the progress of a station. By helping the station you would advance its construction, opening up a potentially lucrative new trade and mission hub.

You would be able to see firstly the framework structure, constructed of metals from local asteroids or brought from afar, and gradually the station would build up from that point. The station would become habitable (and trade could start with it) long before it is fully complete - much like a house development, the extra space would gradually be built as it was needed.

Players could also opt to undertake more insidious tasks that would damage the station's progress for personal profit. If enough players choose this route there is a chance that it will affect the project so negatively that the construction team would cut their losses and move onto the next project, leaving a half-finished station behind.



GRAVITY

Stations will operate as homes and workplaces for many of the galaxy's citizens and while working through the designs of these stations, the team also had to consider the implications it might have on the game universe.

One such consideration came when considering if there were ever situations when a station would not need to rotate. Research shows that a completely zero-gravity environment would be extremely uncomfortable to live in, as water would not be able to settle, so it makes sense to assume that at least a small amount of gravity is always preferable to none at all.

In the Elite universe humans have since colonised a wide range of different planets, all of which would have their own levels of gravity. This means that different colonies would have their own preference as to what was a comfortable level of gravity to live in, which may also affect their physical appearance.

A low-gravity environment is considered easier on the body, but growing up in this environment may also make you taller, but much more frail. People from this sort of colony might be significantly restricted in where they can safely travel to for health reasons. Likewise, someone born in a high-gravity environment might grow up squatter, but with a stronger heart and more tolerant of strain on their body. Retirement would likely be to a lower gravity location. On 1/3 g and below, flying is possible with strap-on wings. Some manufacturing techniques would work better in zero g - whereas high g worlds might be a good source of certain raw materials.

This opens up a lot of exciting possibilities from a fiction perspective, that we are considering exploring further. What other differences might develop between different colonies and could these differences fuel intolerance and discrimination between different groups?

1.4 LEAVING A STATION

Player Aim: Request Permission to launch and Exit a Space Station

- From the landing pad the player selects 'request permission to launch'
- o If the player has remaining fines or charges to pay they will not be given permission to launch without paying them

The players pad will de-magnetize and the player's ship can now be powered up and flown

The player must fly to a holding point near the stations exit

Once the player's ship reaches the holding area it is added to the list of ships waiting to leave

- Leaving ships are given priority over ship trying to enter the station

The player is informed when they have clearance to leave

- The Station's aperture will open to allow the player to leave
- If the player fails to use their window they are moved to the bottom of the queue to leave

Once the player has flown out of the station the player has successfully un-docked

1.5 OTHER DOCKING CONDITIONS

Some stations may have other rules and conditions that the player may have to adhere to in order to be allowed to dock. These may include:

Speed limits

For a set radius around a space station the player must adhere to a set speed limit

- Being observed breaking the speed limit can incur a fine from the stations' faction
- The player's throttle will limit itself to the speed limit, although the player can overrule the limiter and speed if they want to

Scan before Access

The player must submit themselves to a scan before being granted access to the station

Toll

The player must pay a fee in order to be allowed access to a station

1.6 DOCKING FOR FUEL

Some stations may have exterior points where players can dock to refuel. Where this is possible, the player must follow the following procedure.

The player must Select the station as a target and must open communications

- The player can only communicate with a station if the station is in range of their communication equipment

The player selects the 'request permission to refuel' option from the communication menu, to request permission to dock at the station's refueling point



If the player is too far from the station they will be denied permission, and told to close to within 1.5km of the station and request permission again

If the player is currently wanted for crimes against a faction the station is affiliated with the station will refuse to give them permission to dock

- ♦ Below a certain threshold a station may allow a player to dock
- ♦ The player may have the option to communicate that they are turning themselves in, in which case they will be given permission to dock
- ♦ Police may be dispatched to the player's location if they're wanted for serious crimes

If the Player's weapon bays are open they will be informed to close them before approaching the station

The player is directed to fly to a point near the stations entrance and informed to wait for clearance before approaching

- ♦ When the player arrives at the waiting point they are added to the queue for refueling

When the refueling point is free the player will be set a waypoint to dock with the refueling point

- ♦ The player must approach the point and stop in the correct place to trigger the docking process

From this point the player can refill their fuel tank and purchase a limited range of fuels

Once done the player must select the launch option from the refueling point

- ♦ The player's ship will then detach from the refueling point and the player will be free to fly away.

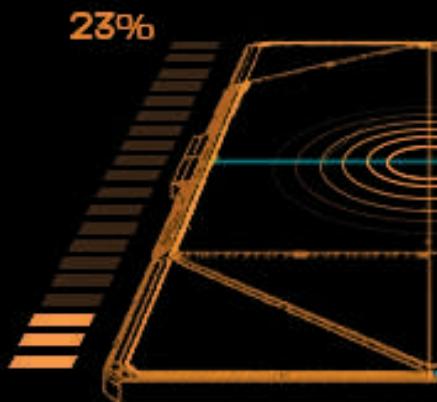
DAHAN STARPORT DOCKING PROTOCOL: THE FEDERAL WAY, THE RIGHT WAY

1. Ensure your vessel is within sensor contact range before requesting docking permission. Your navigation compass will target the starport, enabling you to correctly orient your ship for approach.
2. Navigate to your Contacts panel. Highlight and select the starport from your contact list, and activate the Request Docking signal.
3. Upon successful processing, you will be authorised to enter the starport, and assigned a landing pad. Pay careful attention to your allotted pad number – attempting to alight on an incorrect pad is a crime, and will trigger a lethal response.
4. Note the docking assist interface, now showing your authorisation window countdown. Failure to dock within the allotted time will require you to restart the process from the beginning.
5. Match rotation with the starport and proceed directly through the airlock into the docking bay. Remember, the airlock is a no-stop zone – loitering is a crime.
6. Once inside the docking bay, starport control will enable automatic rotation correction.
7. Your navigation compass will update to show your allotted pad, which will activate landing lights to enable identification.
8. Failure to observe docking protocol before entering the docking bay is a crime, and will trigger a lethal response.
9. Ensure that your landing gear is deployed for final approach. Note the docking assist interface changes to show ship orientation and position. Use this interface to help align your ship above the centre point and in a parallel attitude to the pad, with the rear of your ship visible in the interface.
10. Correct alignment causes the interface to light up; employ a controlled descent to complete the docking procedure.
11. Follow Federal protocol to avoid ship destruction, and enjoy a safe and profitable stay at our facilities.



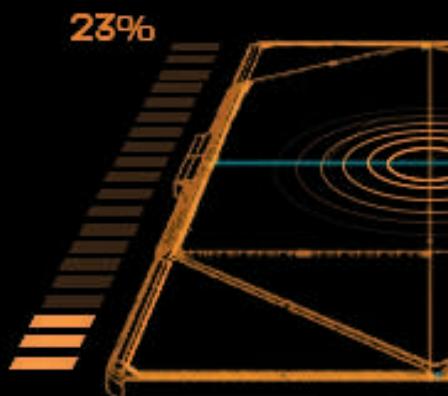
Docking with space stations is a major part of the game and one that we wanted to be a fun activity. Docking starts as you approach the station and requesting docking clearance. Once that is granted you fly into the station itself, and then proceed to land on the pad you have been directed to within the giant, rotating bay. We know that many people found docking in the previous games to be a real challenge and

while we think that there should still be an element of challenge/skill, we also want to ensure that players have the opportunity to get to grips with what is essentially a complex manoeuvre. The first part to that is providing information to the player so that they can perform a good landing. To that end we have the new docking assist interface, concept for which can be seen below:

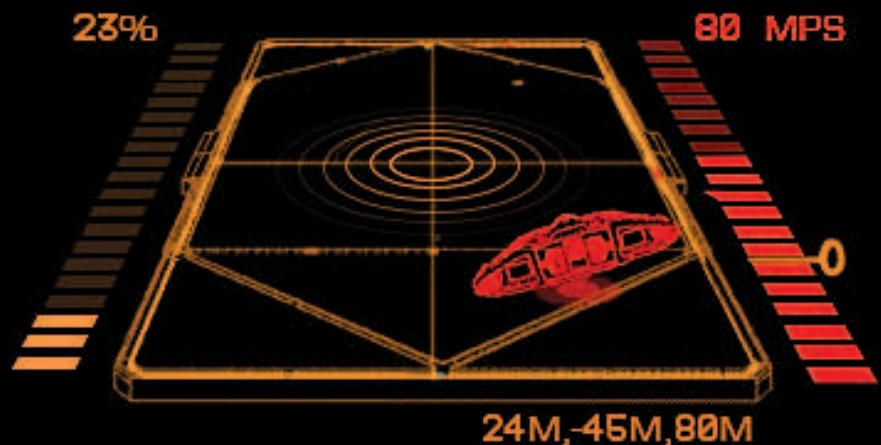
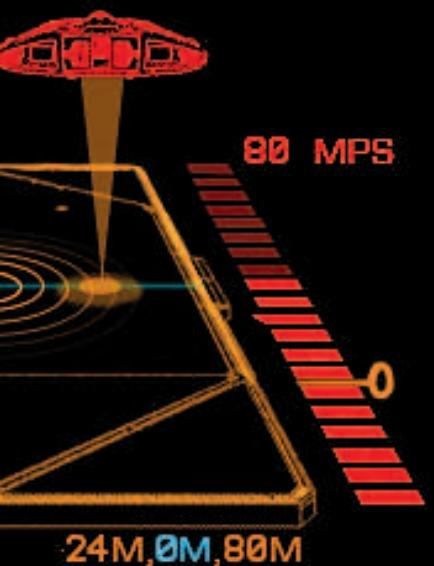
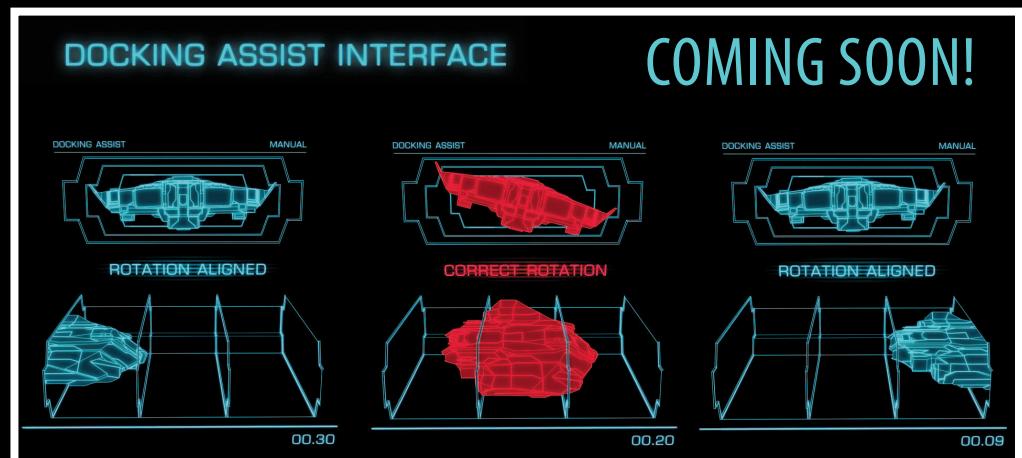
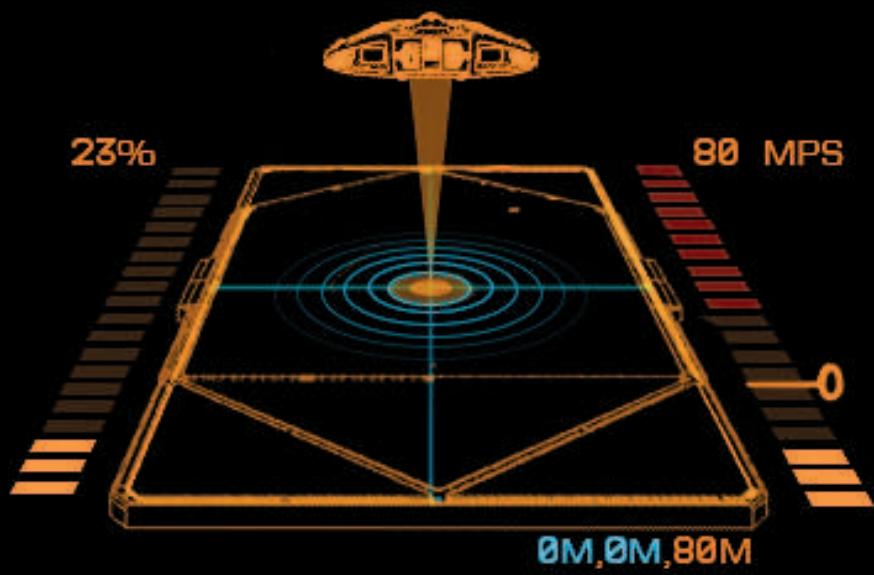
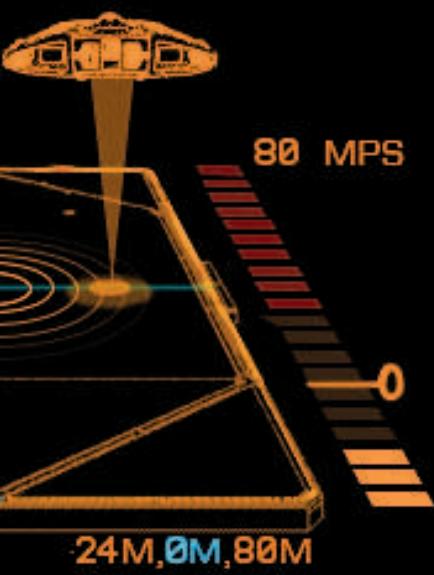


As you approach the pad (some stations will assign specific landing pads so you have to make sure you are landing on the right one), the docking interface is displayed in place of the usual scanner. This provides guides to ensure that you position your ship correctly and helps you land safely. The docking bay rotates with the space station (the stations rotate to provide an artificial gravity effect).

Some stations will provide automatic rotational assistance to make docking easier. Of course not all stations come with this luxury and for players in the alpha wanting to see this they can turn off the assistance in their in-cockpit options. For the truly skilful player there is an art in turning off the rotational correction and flight assist for a full manual landing, it's a thing of beauty when done correctly!



THE ART OF DOCKING



...ches speed, here
too fast to dock.

Collision: prox notification
will presumably work as usual and
not need to be added here.

AUTOMATED DOCKING

To be able to use automated docking the player's ship must have a docking computer module installed and powered

- These are expensive and take up space
- Malfunctions can disable the module preventing its use

Only certain stations can offer automated docking services

- The docking computer is actually a way for the station to take control of your ship and land it for you
- More popular stations are likely to offer automated docking

If a station offers automated docking it will be an option that can be selected when first hailing the station

- Automated docking is an all or nothing procedure; players need to request it before entering the station and it can't be disabled until safely docked

Players can't activate automatic docking if they're already within the station

It doesn't cost anything extra to use automated docking except time

- It could take significantly longer to automatically dock than if a player were to do it manually (providing they're sufficiently skilled)

Firing a weapon or breaking the speed limit will result in the normal consequences associated with breaking the law

- It is not our intention to artificially limit your ability to deploy and shoot weapons or fly fast but there will always be consequences to these actions

Stations will have the ability to fire upon and destroy ships that are breaking the law such as blocking the docking port or landing pads from others

Rotational correction within the station will alleviate a lot of the difficulties in landing with a spinning station

- The skill will then be focussed on lining up with the right pad and gently touching down rather than performing constant thruster changes to keep in position

Docking isn't as hard as you might think

- Just because the previous games docking sequences were notorious doesn't mean this will be, therefore we shouldn't be worrying about automated docking being unavailable some times. ■





CHANGO DOCK SERVICE ANNOUNCEMENT: STARPORT LINK

Chango Dock offers a wide variety of services, available to ships fitted with the standard info-link communications suite. Simply select the STARPORT SERVICES option from the starport link menu to connect to the starport net once you have successfully docked.

The following is a brief rundown of services currently on offer at Chango Dock:

- MUNITIONS:** You will find all your ammunition needs met by our extensive supplies. Space can be an unforgiving host, so remember to restock here before you depart Chango Dock.
- REPAIRS:** Chango Dock maintains a dedicated team and parts sourced from across the galaxy. Our engineers are well versed in the effects of battle damage to vessels, and our prices won't be beat.
- COMMODITIES MARKET:** Chango Dock is pleased to announce that it has finished upgrading its automated market transfer system and is now able to broker purchases and sales of a wide range of commodities.
- OUTFITTING:** We have a wide range of ship modules and fixtures. Check back often as new stock is continually being sourced to our starport.
- SHIPYARD:** We have a fully fitted shipyard at Chango dock and can cater to all of your ship requirements. As standard we accept part exchanges regardless of ship type, and will cover the logistics transfer cost, because we care about your custom.
- CONTACTS:** Our starport net offers direct communications contact with specialised services, including a locally stationed representative from the Pilot's Federation who is ready to deal with all your legal matters.

Remember, at any time you can use the interface to exit starport services and manipulate your standard cockpit interface/initiate ship launch. We thank you for visiting our little haven among the stars, and hope you enjoy your stay at our facility.



SHIELD SYSTEMS

A ship can be fitted with a shield system

- *Shield systems are optional*

For release 1, a shield system has either 1 or 2 zones in playable ships

Larger NPC ships can have more shield zones

Each zone describes an area of hull coverage

- *The sum coverage of all zones always completely covers the hull*
- *In shield systems with 2 zones the coverage is split between fore and aft zones*

Ship hulls determine the number of shield zones in a shield system

The player must assign shield generator modules to the shield system

A single shield generator module must be assigned to a single shield zone system

1 or 2 shield generator modules can be fitted to a system with 2 shield zones

- *If one shield generator module is fitted its values are equally divided between the two zones*
- *If two shield generator modules are fitted each is assigned to an individual zone*
- *The player must choose which shield generator module is assigned to the fore and which to the aft zone*

Shield generator module assignment is carried out whilst docked

- *in later releases players will be able to manually assign shield generator modules by direct interaction*

Each shield generator module provides the following combat parameters

- *Health – the amount of damage that can be absorbed before a shield zone collapses*
- *A collapsed zone will reform at full health after a delay (low minutes)*
- *Resistance – the amount of damage that is “soaked” by the shield before any damage is applied to the shield’s health*
- *A shield generator module assigned to two shield*

The shield system determines recharge rate – how much shield health is replenished over time when the shield is not under attack

Shield generator modules have a number of secondary parameters

- *Cost*
- *Grid footprint*
- *Power draw*
- *Heat generation*
- *Module health*

Additional shield generators create redundancy but generally speaking, two smaller shield generators are less efficient than a single, larger shield generator module.

Shield Interactions

A shield system gives the player access to strategic and tactical decisions



The player makes strategic choices when outfitting a ship with shield generator modules

- ♦ Redundancy versus efficiency
- ♦ Cost versus effectiveness

During flight the player is able to use a simple interface to tactically push shields fore/aft

- ♦ Recharge rate is upped to 75% for the pushed shield zones and reduced to 25% for the remaining shield zones

During flight the player can tactically deploy cells from a shield bank to stabilize damaged shields before they collapse

As an attacker, a player is able to (whilst a shield is collapsed) target and attack shield emitters

- ♦ Emitters that receive damage transfer the damage directly to the appropriate shield generator module, potentially destroying it or causing malfunctions
- ♦ Targeting emitters is initially manual, though advanced sensors are able to provide varying levels of assisted aim

Shield Bank (Optional Module)

Players can augment their shields performance by equipping their ship with an (optional) Shield Cell Bank

Shield cell banks are large installed systems that allow the player to restore a shield quickly to full health

- ♦ Different shield cell banks provide the player with more shield cells
- ♦ Shield cells can be used to stabilize a shield (massively increases shield recharge rate for a brief period of time)
- ♦ Shield cells are ineffective on collapsed shields
- ♦ Shield cells are consumed when used

Shield Cell Banks have the following properties and attributes:

- ♦ They draw a fixed amount of power from the ship's power plant when active
- ♦ They have a mass and size limiting how many and in what way they can be put inside a ship
- ♦ Number of cells: the maximum number of cells a cell bank fitted with

Using a streamlined cockpit interface control the player can select a shield zone and apply a shield cell

Preferred options would be hotkeys for each shield zone or a "two-tap" (select shield, stabilize)

There is a slight delay from the player using a cell to the shield being restored (seconds)

- ♦ A visual effect on the shield occurs during this delay which can be seen by other players.



SENSOR MECHANICS

DEFAULT SENSORS FOR ALL SHIPS

Upon arrival to a new location a picture of potential contacts around the player based on their distance and signature appears (see Signature and Sensors below)

More detailed sensors are located in a forward facing arc that have better range capabilities thus resolving contacts where the default all-around sensors cannot (usually a multiplier to the default sensor range)

In addition to the above false positives are put into the mix depending on the quality of the sensors and/or any environmental factors (see Signature and Sensors below)

To resolve a contact the distance between the ship and the contact needs to be reduced and/or the signature of the contact needs to increase (see Signature and Sensors below)

- A low signature contact won't resolve until it's quite close where as a high signature contact can be resolved from quite a long way away

Signature can be based on several factors including heat and engine emissions

Only contacts that have been validated can be targeted by the targeting computer so that weapons can provide assistance/gimballing/lock-on etc.

ADVANCED PASSIVE SENSORS

These are deployable sensors that dramatically improve the ship's forward facing detection abilities by significantly increasing the range at which a specific signature value can resolve a contact

As they are deployable they take up a valuable hard point on the ship. Passive sensors like these don't affect the ship's current signature to other ships' sensors other than the potential heat increase through power used

ADVANCED ACTIVE SENSORS

These are deployable sensors that actively search for contacts using strong EM pulses and other forms of detection that dramatically increase the ship's own signature as a result

They are extremely powerful in that potential contacts within their sensor range can be validated instantly at the cost of also lighting the ship up to everyone else

They come in both forward facing only and in fully spherical configurations

- Forward facing typically operate to much larger ranges and are quicker than the all around types

Activating an active sensor will "ping" the area and instantly reveal any potential contacts that the sensor is able to detect

- The further away a contact is the less likely it will be able to be detected

After activating a contact will be told they have been "pinged" and can then look out for possible new sensor contacts that have just resolved to find the likely suspect

SIGNATURE AND SENSORS

Sensors are tuned to be able to fully resolve a contact at a specific distance providing the signature is equal to 1



- ♦ For example a sensor with range 8000m will be able to fully resolve a contact at 8000m with a signature of 1
- ♦ If the contact was instead at 4000m away then it would only require a signature of 0.25 to be resolved
- ♦ Likewise a contact at 16000m away would require a signature of 4 to get resolved

The environment can affect the stats of the sensors such that ranges are reduced, default signature values increase or lowered, arcs widened etc.

Additionally special equipment could be used to affect other players scanners such that effective ranges or signatures are reduced when they being scanned

If the contact is unresolved because their signature isn't high enough for the range they're at to be detected instead a scalable VFX is applied on the sensor UI to indicate the possibility of a contact

- ♦ The close the contact is to being resolved the more focussed and consistent the VFX is so the player can try to get closer or turn to point their more powerful frontal sensors at them to finally resolve the contact
- ♦ Distant and low signature contacts might have zero VFX applied or barely show up as a sensor glitch at all
- ♦ False positives are mixed into this to add a layer of uncertainty to the above

TARGETING MECHANICS

Once a ship has been resolved on the sensors the player can target them to provide a more detailed readout on the type and status of the ship

- ♦ Targeted ships are highlighted on the sensors as well as on the HUD

Detailed readouts of the ship are displayed in a dedicated panel on the cockpit whilst the ship is targeted

By having a ship targeted several other mechanics can come into play based on the equipment installed and/or deployed on the player's ship:

- ♦ Missile lock (described below)
- ♦ Subsystem scanning (described below)
- ♦ Cargo Scanning (Mechanically identical to subsystem scanning)
- ♦ Bounty Scanning (Mechanically identical to subsystem scanning)
- ♦ Weapon gimballing (ability for gimballed weapons to provide aiming assistance on targeted ships)

COOL RUNNING

Heat generation is a significant issue that has to be managed as you pilot your spacecraft. There is no conduction or convection available in a vacuum, so the heat has to be radiated away to prevent overheating and degradation of system performance. This radiant heat provides a tell-tale signature that is used to provide the information on your scanner about the other ships in your local space. Unfortunately, it means you show up on everyone else's scanners, too..!

The general rule is: the hotter you are running, the easier it is to 'see' you. The operation of every module on your ship contributes to the load on your power-plant and hence your heat signature. A representation of your current signature is shown on your ship's display, along with a percentage measure of your heat relative to the allowable maximum.

Faster-than-light travel in-system using 'super-cruise' of course uses prodigious amounts of power, and the heat signature generated lights you up like a beacon on everyone's scanners. And even that pales in comparison with the amount needed for long-range hyperspace travel between systems.

Normal propulsion using main engines produces significantly less heat than faster than light travel, and is normally not a limiting factor in general manoeuvring and combat.

Other sources of heat are weapons – some more so than others. For example, kinetic weapons are a good choice to keep your heat signature low, as the heat is generally ejected from your ship with the projectiles. Lasers and other energy weapons and shields, however, do contribute to the heat signature of your ship. In general the energy demand of every system you have contributes to the heat generated by your ship.

The heat vents on your ship operate automatically to attempt to regulate your ship's temperature and keep all systems operational.

Additionally heat-sink modules are available as part of your loadout configuration which allow you to jettison heat stored by heating physical blocks to white heat, then ejecting them, having the additional benefit of acting as a decoy to other ships' scanners and any incoming heat-seeking missiles.

In more extreme situations you can choose to 'button down' your ship for a short while, which stops the normal operation of the heat vents. Your shields are inoperative whilst you are in 'silent running' like this, and the heat that is still being generated by your ship's systems builds up. Effectively your ship is 'holding its breath' and this is only a temporary measure – your ship will become disabled if you carry on too long.

Switching off your ship's systems (even flight assist!) and using only gentle nudges of your thrusters to manoeuvre can result in a very stealthy profile, and you can combine this with the right weapons and tactics and achieve a whole new dimension to space combat. But beware – the hunter can easily become the hunted..!

If you are playing the Alpha or have Premium Beta access to the single player missions and haven't already mastered it, start experimenting and see how you can add pro-active thermal management to your repertoire of Elite: Dangerous Pilot Federation 'tricks of the trade'!



MISSILE LOCK

To begin the missile lock sequence the player must...

- ♦ ...have a ship targeted
- ♦ ...have a seeking missile weapon deployed

Once the above conditions are met the HUD will indicate an acquiring lock symbol which will, over time, move from the centre of the HUD to the onscreen position of the targeted enemy

When the acquiring lock symbol is maintained on top of the targeted ship icon for a short time the missile system will acquire a lock and the symbol will change

Whilst a lock is acquired the symbol will overlay the target providing the enemy is within the FOV of the player's ship

If the enemy ship ever moves outside the FOV of the player's ship any missile locks will be lost and will need to be reacquired

Players can speed up missile lock by aiming their ship such to bring the acquiring lock symbol on their HUD on top of the intended target faster than if just leaving it to do it automatically

Firing a seeking missile with a lock acquired will result in the missile being able to either:

- ♦ Independently track the target and no further action by the player is required (they can break lock without affecting the launched missile)

- ♦ Track the target providing the player maintains a lock throughout the missiles flight path (losing lock will result in the missile maintain its last heading until the lock is reacquired or the missile runs out of fuel)

SUBSYSTEM TARGETING

To begin the subsystem targeting sequence the player must...

- ♦ ...have a ship targeted
- ♦ ...have a subsystem scanning module installed and/or deployed if necessary

The scanning sequence will take time based on the quality of the module and also requires that the target ship to be in the FOV of the player's ship the entire time (like with missile lock)

- ♦ The target ship will know they're being scanned unless the player is using specifically stealthy scanning modules

If the target ship moves off screen or the lock on is disengaged for whatever reason the scanning will be cancelled

Only when a full scan for the required time is made will the enemy subsystems be available to target through the cockpit interface and other appropriate input



Once a full scan is completed the player doesn't need another scan to reacquire the subsystem list if they change targets in the mean time (i.e. the ship remembers the results of the scan on a per target basis)

CARGO SCANNING

Mechanically identical to subsystem targeting, cargo scanning just requires the specific scanning module to be installed to enable it. Subsystem scanners, cargo scanners and bounty scanners can both be installed at the same time and will also run at the same time provided they are both powered and/or deployed if necessary

BOUNTY SCANNING

Mechanically identical to subsystem targeting, bounty scanning just requires the specific scanning module to be installed to enable it. Subsystem scanners, cargo scanners and bounty scanners can both be installed at the same time and will also run at the same time provided they are both powered and/or deployed if necessary. ■

GALAXY

Alpha 4 genuinely contains over 400 billion star systems. And they are all moving correctly; spinning, orbiting each other in an incredible astronomical ballet. We are also modelling interstellar molecular clouds, and though some of the detail in these (particularly for nebulae) will come after Alpha 4, wherever you are, the 'night sky' is accurate. Beyond our galaxy, perhaps surprisingly we do still have a 'skydome' – but it is now a staggering 100,000 light years away, containing all the other galaxies, including the Magellanic Clouds. That's one heck of a draw distance...

If you go to Earth (not available to travel to in Alpha 4 – but you can see Sol in the galactic map), you'll see our familiar constellations. In fact over 130,000 objects in the night sky – including all stars visible to the naked eye – are modelled. We can even show those joined-up Solar-centric constellations when viewed from elsewhere – which become stretched and distorted due to parallax. Want to travel to Orion's belt and see what good old Sol looks like from there? Do it. Or just sit and marvel at the local sunrise (yes all the planets are moving too) over the rings and moons of a gas giant you've just found.

To achieve this, we start out with the precise locations all the known stars, exo-planets, celestial bodies and phenomena. Beyond that, procedural techniques are used in conjunction with real, 'hard' physics to model the other hundreds of billions of star systems – the star's location, type, temperature, chemical compositions, what planetary systems there are, etc.

Each individual aspect of the vast galaxy is also represented with unprecedented visual fidelity, making the most of the latest lighting and 'physically based rendering' (PBR) pixel-shader techniques along with procedural algorithms that leverage our talented artists' efforts.

You can seamlessly go from being pressed up close against an asteroid, thermal systems 'buttoned down' as you stalk your prey, to super-cruising at super-luminal speeds through a system to travelling through hyperspace across light years of galaxy. And then there is the networking traffic which communicates the location, velocity and status of your and other players' ship, bullets, missiles, lasers, heat-sinks, shields, current thermal profile, cargo, and of course all the AIs etc.

The sheer, raw scale of the galaxy means that even being able to accurately represent the position and vast scale of planetary objects, asteroids, ships, missiles and so on is a huge challenge in itself, requiring the use of very high numeric precision. The 32 bit tools and technology of the previous generation of computers and engines is simply not up to the job.

Being able to compute everything we need to, from the motions of those 400 billion star systems worth of stars, planets, moons, rings and asteroid fields, to the lazy whorls in a gas giant's atmosphere and the precise self-shadowing surface detail of that small asteroid you are currently hiding behind, is a similarly Herculean task. As is fully communicating all the necessary information between players.

FUEL MODULE

Every ship has a module within it for handling fuel storage and use across the ships systems colloquially called the Fuel Tank.



THE MODULE HAS THE FOLLOWING PROPERTIES:

A Main Tank that can store a specific amount of fuel in an appropriate unit (e.g. tons)

- This defines the operating time and/or range for a space ship before refueling is necessary

An Active Fuel Reservoir from which current ship operation draws from

- Always a standard size in the same unit as the main storage tank (e.g. 1 ton)

NORMAL SHIP OPERATION

During normal ship operation a small amount of fuel is used continuously based on the demands of the power plant

- This amount of fuel is always taken from the Active Fuel Reservoir (AFR)
- The higher the power draw the faster the fuel is used up
- A single unit of fuel (e.g. 1 ton) will last a significant amount of time (e.g. an hour) under normal operating parameters (e.g. 75% of full power)

Once the AFR is drained, fuel is diverted from the Main Tank to refill it completely (so long as there is fuel remaining within it)

- So a AFR with capacity of 1 ton will drain 1 ton of fuel from the Main Tank exactly (ensuring the Main Tank is in whole units at all times)

If the penultimate ton of fuel is accessed from the main tank to put into the AFR a warning is given to the player making them aware that they only have a single ton left in their main tank for hyperspace jumping with (in addition to the penultimate ton that has just been put into the AFR)

If the last ton of fuel is accessed from the main tank to put into the AFR a final warning is given to the player indicated they will no longer be able to perform a hyperspace jump

If the AFR is drained along with the Main Tank the ship turns all modules except Life Support off

- The player can't manually turn anything else back on anymore
- Life support is operating on emergency battery power and can only maintain operation for a limited time (e.g. 15 minutes)
- After the battery power has gone the ship fully shuts down and the player will asphyxiate and die if they remain on board (in non-ironman mode they would automatically launch the escape pod at this point)

SUPERCruise

Supercruise drains fuel from the AFR at an accelerated rate (e.g. changing the operating time from hours to minutes)

- Otherwise it's much like normal ship operation

So long as fuel can be drained from the Main Tank to refill the AFR supercruise can be maintained

If no fuel remains in the AFR or Main Tank then supercruise will abort and the player will be unable to use it anymore

HYPERSPACE

To hyperspace travel the player uses fuel from the Main Tank directly in whole units

Each whole unit of fuel equates to a jump up to one light year in distance

- A jump of less than whole number of light years will still consume whole units of fuel (e.g. a jump of 1.5 light years will consume 2 whole units of fuel)

If the Main Tank is empty the player will be unable to hyperspace jump (even if they have fuel in the AFR)

REFUELING

Players can refuel their ship at stations and refueling outposts

- Fuel is always bought in whole units
- The Main Tank can be refilled separately to the AFR
- Despite the AFR being able to have less than a whole unit of fuel within it, it is always completely refilled when refueled and the cost is always in whole units of fuel

Players can refuel their ship by scooping fuel directly from stellar bodies (stars, gas giants, nebulae)

- The ship must be fitted with a fuel scoop
- The player uses the fuel scoop to refill their AFR based on how successful they're doing
- Rates of refilling is based on player skill and the stellar body in question

Once the AFR is 100% filled whilst scooping the entire amount of fuel within it is put into the Main Tank so long as there is room

Further scooping will again start to refill the now empty AFR

If no room is available in the Main Tank scooping must stop

PLAYERS CAN ACQUIRE FUEL VIA A FUEL TRANSFER WITH ANOTHER DOCKED SHIP

Players can utilize a distress beacon to signal for any nearby ships to help with refueling

- *The beacon isn't a guarantee and could in theory bring the player more trouble than they're currently in with their fuel concerns (but could be the only hope left of rescue)*
- *Activating the beacon is a onetime only device that will be renewed upon the next station visit (conveniently prevents misuse and ensures the player is incentivized to dock after such an attempt if the beacon was successful)*

Regardless of the method used to contact or approach another ship they must first be docked with the other ship successfully

The ship can initiate a fuel transfer with the other docked ship through mutual agreement

- *This can be gifted or can be made a part of a trade depending on the interface/comms channels used to initiate the transfer*

Fuel is transferred in whole units from one ships Main Tank directly into the other ships Main Tank

There is no way to transfer fuel from the AFR of one ship to another

Once the fuel transfer is complete an empty AFR will automatically refill as per usual with the newly acquired fuel from the Main Tank

TYPES OF FUEL

To add variety and player choice to the fuel mechanic different types of fuel are available to be purchased/scooped/acquired. The following rules apply to different fuel types:

The default fuel sets the benchmark on which other types of fuel operate; it is considered standard

Other fuels are either of a lower or higher quality than the standard fuel

- *Lower quality fuel has a penalizing modifier to consumption rates, i.e. if standard fuel will keep a particular power plant running at 75% power for 1 hour, a lower quality fuel with a modifier of +20% consumption would only last 50 minutes*
- *Lower quality fuel also has a penalizing distance modifier for hyperspace jumps, i.e. if standard fuel gives a 1 light year jump per unit fuel, a lower quality fuel with a modifier of -50% distance would only jump ½ light year per unit fuel instead*
- *Higher quality fuel has a beneficial consumption modifier, i.e. a ship will run for longer on it compared to standard fuel*
- *Higher quality fuels also have a beneficial distance modifier, i.e. each unit fuel used in a jump will go further than 1 light year*
- *Regardless of quality certain types of fuel may have additional effects or byproducts that need to be dealt with (e.g. irradiated waste that must be stored in empty cargo canisters or risk contaminating the ship and its crew)*

The entire Fuel Tank module can only operate on a single quality level type of fuel

- *The player can acquire fuel of a different quality level to that already in their system but conveniently all fuel is compatible with one another albeit*

only as efficiently as the lowest quality in the system (i.e. the entire Fuel Tank takes on the quality of the lowest quality fuel within the system)

- *E.g. scooping any fuel higher in quality to that which you have will maintain your fuels current efficiency. Scooping fuel of lower quality than that in the system will lower the quality of everything to the same level as that scooped*

MODIFIERS

As described above fuel quality can determine a number of modifiers that affect the performance and/or efficiency of the ship. However these modifiers can be provided by other systems such as the ship hull, drives and hyperspace module. The modifiers are formally described below:

Consumption Rate – a percentage modifier for altering the base rate of consumption of a fuel during normal use

Jump distance – a percentage modifier for altering the base jump distance of 1 ly per ton during hyperspace travel

The modifiers are applied individually to the base values as determined by the fuel quality before being applied (e.g. two sources of -50% jump distance will actually only result in a 75% reduction overall in distance rather than 100%)

E.g. explorer class ships hulls typically have beneficial modifiers to jump distance and consumption rates opposed to military grade hulls that require more fuel consumption in general to civilian ships

FUEL TANK MALFUNCTIONS

The Fuel Tank is like any other module in the ship (although it's usually built into the superstructure and is thus typically not upgradable) in that it can suffer damage and malfunctions. These malfunctions are listed below:

Minor malfunctions:

- *Faulty fuel line – temporarily starves the power plant of fuel thus reducing available power gradually until no power is available (modules turn off in priority order) until the fault fixes itself (variable time limit for the malfunction)*
- *AFR fuel leak – temporarily drains more fuel from the AFR than normal as fuel is effectively leaking from the reservoir until resealed automatically (variable time limit for the malfunction)*
- *AFR refill fault – temporarily stops the refill process when the AFR is empty resulting in starving the system as in a faulty fuel line malfunction above but can only happen when refilling the AFR (variable time limit to the malfunction)*

Major malfunctions:

- *Main Tank leak – temporarily drains fuel from the main tank over a long period of time before automatically resealing. Whilst draining the Main Tank is considered to have one less whole unit of fuel as what it once had as that unit of fuel is slowly drains away. If that unit of fuel completely drains another whole unit is sacrificed to the malfunction. Once the malfunction is over any partial units of fuel left in the Main Tank will automatically top up the AFR if possible and any further leftovers are lost*
- *Main Tank fire – the Main Tank ruptures and ignites in a dangerous inferno completely destroying all units of fuel in the Main Tank (AFR and Reserve Tanks are unaffected). The fire is a separate ship wide malfunction described in another document and this malfunction is really just augmenting it by also having all the fuel in the Main Tank lost to the fire.*



FUEL MODULE 41



BASIC SHIP CREW FUNCTIONALITY

Crew are either human or mechanical

Mechanical crew are not sentient – they are basically specialised robots capable of carrying out specific activities

Crew have a service contract

The service contract describes the remuneration package

Remuneration is defined as a credit salary (which may be zero based on circumstance) per time period

In the case of mechanical crew the remuneration package describes the maintenance schedule which must be paid for and carried out when docked

Crew can be acquired at docks or through missions and events

Once obtained, a remuneration package is automatically deducted from the commander's credit account at the beginning of each time period; pay is in advance

At any time crew service contracts can be terminated

Terminated crew will disembark at the next habitable dock; the commander is reimbursed for any time not served

Mechanical crew that are terminated will become cargo canisters

- If no cargo space is available they will be dismantled (the commander will be warned)
- Mechanical crew in cargo-form do not require maintenance, and can be activated (re-hired) at any time
- Failure to follow the maintenance schedule for mechanical crew increases the chance of malfunction



Crew have a type that determines how they may be used:

Gunner: rated to operate turret weaponry

Engineer: rated to repair internal modules

Pilot: rated to pilot vessels

Marine: rated to repel boarders (requires ship internals update)

Each ship has a maximum number of crew slots for each type

When crew slots are filled the commander has access to a number of benefits based on crew type:

Gunner: turret weapons are more accurate and can switch targets to make opportune attacks; the more gunners available, the more turret weapons can gain these benefits at the same time

Engineer: damaged modules will be repaired; the more engineers available the more modules can be repaired at the same time.

Pilot: the commander can initiate defensive manœuvres, chase target and travel to location orders

Marine: marines will automatically engage ship invaders (requires ship internals update)

Crew have an ability level; this determines the effectiveness of their actions:

Gunner: ability determines the accuracy increase

Engineer: ability determines the speed of repair

Pilot: ability determines the quality of flying

Marine: ability determines combat effectiveness (requires ship internals update). ■



WINGMEN

Wingmen in Elite will provide players with the ability to, for a price, protect themselves with AI companions. For a limited period, these companions will escort the player and aid them by attacking aggressors. Players will need to be careful who they hire though, some will follow the letter of the law, others may decide that you are a juicy target, betraying you when you least expect it.

HIRING

Hiring a wingman will work in the following way:

Wingmen will be advertised through the bulletin board system present at all stations. The number and type available will be determined by the development and wealth level of that system.

- ♦ *High development = increased chance of high quality wingmen appearing.*
- ♦ *High wealth = a greater number of wingmen appearing.*

An AI wingman can be hired for a limited period to act as allies. The price will be determined by the distance/location the player needs escorting to and the quality of the wingman on offer (more on this further down).

- ♦ *There will also be a max. duration on the contract, calculated from the distance needed.*

- ♦ *Both the destination location and the max duration will be stated on the bulletin board before the player commits to the hire.*

Player's with an active bounty or wanted criminal status in that system will only be able to hire wingmen of a criminal persuasion. See *Criminality*.

They will stay with the player until the destination has been reached, the length of the hire has expired, or until they have been forced to eject/been killed.



ESCORT BEHAVIOUR

Once hired, wingmen will fly in formation around the player, attempting to follow them wherever they go and defending the player from aggressors.

The following rules apply to their behaviour:

- ♦ Wingmen will retaliate against unprovoked or illegal attacks against themselves and the player.
- ♦ They will always have enough fuel to follow the player's hyperspace/FSD jumps.
- ♦ Whenever the player enters a station, they will patrol in nearby space and wait for the player to exit again.
- ♦ A maximum of two wingmen slots are available per player.

AI COMMANDS

Once a wingman is hired, for the sake of communications, it is considered part of a group with the players. Players can then use the communications panel to issue simple orders to all available wingmen. These include:

- ♦ Hold Fire – don't attack or fire upon any targets
- ♦ Fire at Will – open fire on any valid targets
- ♦ Wait – stop where they are
- ♦ Follow – fall back into formation around player
- ♦ End Contract – end the contract prematurely and cease escort.

QUALITY

Not all wingmen are created equal; each will have their own quality value that determines their ability and ship type. The player's faction relationship at the location of hire will define the quality of the available wingmen.

FACTION REPUTATION

Faction reputation will provide a straight, sliding scale of quality to the players. The higher it is, the better the available wingmen will get. As trust is gained, better pilots become available:

- ♦ The higher the reputation the better quality (and more expensive) the selection of wingmen available. Low reputation will mean only civilians or petty criminals, high will mean professional pilots and experienced criminal mercenaries.
- ♦ In ship terms, low faction reputation only allows access to wingmen with Sidewinder's, Eagle's and Adder's, as well as a basic set of weapons and loadouts.
- ♦ High faction reputation will allow access to wingmen with more capable and powerful ships: Cobra's, Viper's and Fer-de-Lance's, with decent weapons and loadouts.



CRIMINALITY

Criminality will not only affect the types of wingmen available to hire, but also how a wingman will react to the players actions. A player's criminality reputation will provide an opposing scale of good to bad. An extremely low criminal rep. will attract the most professional pilots, those that are most trustworthy. An extremely high criminal rep. will attract the most criminally minded pilots, willing to ignore criminal acts.

Each wingman available will have a certain threshold of criminality that determines whether they'll work with you.

Being wanted or having an active bounty in a system will mean that only those wingmen with a criminality value above a certain threshold will agree to escort the player.

The wingmen with the highest or lowest criminality threshold will only be available when a player has very high faction reputation. Thus the best quality wingmen are only ever going to be very trustworthy or very criminal.

At middling criminality reputation, only a low quality of wingman will be available, no matter the faction reputation. This is to stop the middle ground from providing the best available pilots (i.e. willing participants in killing sprees).

The following player actions undertaken whilst an escort is present will cause a reaction (see Wingman Reactions):

- Attacking a ship without cause
- Arriving in a location with a currently active bounty.
- Being reported for a crime

WINGMAN REACTIONS

Where a wingman stands on a criminality scale will determine their reaction to the player's criminal behaviour whilst escorting:

High criminality means they will ignore crimes and breaches of contract, even going so far as to help out, possibly scooping up left after cargo.

Mid-high criminality means they will ignore crimes and breaches of contract, but will not get involved in any criminal acts by the player.

Mid-low criminality means any crimes committed or breaches in contract will cause them to end the contract and abandon the player. There is a chance they will report the crime to the system authorities.

Low criminality means any crimes committed or breaches in contract will cause them to attack the player and report them to the system authorities. They will abandon the contract at this point.

- Additionally, all wingmen will consider acts of aggression against their own faction, or any allied factions as an act of aggression against them. This will end the contract and cause them to become an enemy to the player.



WINGMAN BETRAYAL

There is a percentage chance that a wingman will betray a player and turn on them during an escort contract. This chance is primarily based on the wingman's criminality reputation (meaning the more criminal wingmen are most likely to turn), but is affected by various factors such as reputation, location and cargo (the following values are subject to change and balancing):

Base chance

- ♦ *High criminality:* +50%
- ♦ *Middling criminality:* 0%
- ♦ *Low criminality:* -50%

NPC Reputation

- ♦ *High reputation:* -30%
- ♦ *No reputation:* 0%

Faction Reputation

- ♦ *High reputation:* -20%
- ♦ *No reputation:* 0%

Cargo value (will scale with ship size, credit values changeable)

- ♦ *10000+ Cr:* +30%
- ♦ *6000-10000 Cr:* +20%
- ♦ *3000-6000 Cr:* +10%
- ♦ *0-3000 Cr:* 0%

Compared ship power score (an accumulated value, based on ship type, weapons, modules, etc.), player vs AI

- ♦ *More powerful than player:* +25%
- ♦ *Similar power as player:* 0%
- ♦ *Less powerful than player:* -25%

Location

- ♦ *Anarchy space:* +25%
- ♦ *Within the jurisdiction of a lawful space station:* -50%
- ♦ *Within sensor range of authority vessels:* -50%

A value is then calculated and a betrayal roll is made, this value can then be re-calculated and re-rolled whenever the situation changes. If a betrayal roll succeeds, the contract ends and the AI will communicate their intent to attack the player, offering them the chance to avoid the fight by either:

- ♦ *Dumping cargo*
- ♦ *Paying them off*

If the player doesn't accept either of these, doesn't communicate for a set period of time or attacks the ship, the former wingman will attack them immediately.



PERSISTENT NPC'S

GOALS

Provide consistent characters for player's to interact with
 Provide a sense of history for the galaxy
 Provide the opportunity for casual encounters to become longer running threads

CHARACTER TIERS

Character tiers are used to identify the characters, their significance and permanence in the game world.

TIER 1 CHARACTERS

Tier 1 characters are major characters within the game world, for example Planetary Presidents, Major Corporation CEO's and top ranking crime bosses. Typically the player will interact with tier 2 characters associated with the tier 1 character rather than directly with the tier 1 character.

There is a global list of tier 1 characters.

They are identified by the following characteristics:

- *Players do not interact with these characters directly.*
- *The character is common to all online players.*
- *The character is created via an in-game invent – typically manually.*
- *The character can only be killed by an in-game event.*
- *A tier 2 character can be promoted to tier 1, but only by an event.*

TIER 1 CHARACTER EXAMPLES

- *Faction leaders*
- *Station leaders*
- *Regional persons of note*
- *Engineering/Scientific specialists (enhanced weapons and modules)*

Can provide missions, but only on rare occasions, for example:

- *Very high faction rating*
- *Very high player rank*

TIER 2 CHARACTERS

Tier 2 characters are characters that persist for players, but can be interacted with directly. There is a per player list of tier 2 characters and they are identified by the following characteristics:

- *Players can interact with the character directly.*
- *Character can be killed by players or by events.*
- *Character can be created via an event, by the game or promoted from tier 3.*
- *Character can be promoted from tier 2 by being known to a large number of players.*
- *Characters can issue missions.*

TIER 2 CHARACTER EXAMPLES

- *Faction leader underlings that the player deals directly with*
- *Mission targets*
- *Mission providers*
- *Pilots of NPC vessels that the player has previously interacted with*
- *Player contacts*



TIER 3 CHARACTERS

Tier 3 characters are transient characters that are created when traffic is generated, these are typically pilots for NPC ships. Tier 3 characters are randomly generated from a global pool as needed.

If the player interacts with a tier 3 character then the character may be promoted to a tier 2 so they can be encountered again. They may also shift back down to tier 3, if the interact is minor, as their importance will diminish over time.

They are identified by the following characteristics:

- ♦ *They are not persistent*
- ♦ *They can be promoted to tier 2 (and thus become persistent)*
- ♦ *They are randomly created according to the required archetype*

TIER 3 CHARACTER EXAMPLES

- ♦ *Pilots for generated traffic*
- ♦ *Passengers*

NEWSFEEDS

Characters (particularly tier 1 types) can be used as named people in news items.

REQUIRED DATA

Each persistent character has two sets of data:

- ♦ *Core information*
- ♦ *Character log*

CORE INFORMATION

The core information defines the character and how they interact with the world and the players. The required data includes:

- ♦ *Name*
- ♦ *Archetype – this is used to manage events the character is attached to. It also defines what missions or behaviour the character has.*
- ♦ *Location – this is where the character is currently based.*

CHARACTER LOG

Like players the character's (tiers 1 and 2) generate an event log to track their history. There will be a separate design discussion on the player's log, but for the characters the following information needs to be recorded for each entry:

Timestamp

Character/Player

Event type

Other parties

- ♦ *The NPC's log of player interactions will work on a system of event significance, the more significant the interaction, the more likely the character is to remember it. An entry of a player destroying an NPC's ship will last far longer than a quick player communication. Each entry will lose significance over time, allowing an NPC to "forget" interactions, and eventually returning them to a lower tier.*
- ♦ *The propagation of this data across players will need to be handled by the server, making this data shareable across multiple instances of the game. Igor has more information on the technical aspects of this system.* ■



DEATH PENALTY RULES

When a commander's ship receives catastrophic hull damage (breaks apart) or becomes incapable of supporting life, the commander automatically escapes via an ever-present, indestructible escape pod

Depending on the circumstances the following effects can occur:

- ♦ In situations where the ship receives an excessive amount of damage in one attack, all cargo inside is destroyed and the hull is obliterated
- ♦ In situations where a ship has suffered catastrophic but not excessive damage, a percentage of the cargo inside is spilt out and the hull remains
- ♦ Cargo can be flagged as "fragile" – these are always destroyed and never ejected, allowing us to prevent unwanted multiplication of rare cargo

Event/mission specific cargo can be destroyed or ejected based on mission requirements

- ♦ Event/mission cargo can have ship module requirements to prevent unwanted outcomes (e.g. an important VIP might only accept a ride in a ship that had cabins featuring automatic escape capsules)

The escape pod transports the commander back to the last station that they docked at

Commanders losing a ship can accrue an excess fee which must be paid straight away

Starter ships with starting equipment have no excess fee

The excess fee is a percentage of the ship's total value (including equipment)

- ♦ Any active criminal bounty is transferred to the excess fee

If the commander owns multiple ships they can choose to forgo a replacement ship and avoid the payment, choosing to pilot another ship they own

- ♦ Any active criminal bounty must still be paid

If the commander cannot afford the excess fee and has no other ships they must use a creditor to pay the fee amount

Once the excess fee has been paid the commander is given a replacement ship and equipment identical to the load out when the ship was docked (the context is that there is an automatic insurance premium applied to all sales)

If the attack was a criminal act:

- ♦ Cargo collected by anyone other than the commander is flagged as stolen goods
- ♦ The perpetrator is placed in the "all group" for some game-time duration
- ♦ The perpetrator has a bounty placed upon them, based on the ratings of ships involved in the attack

Commanders can explicitly become allies with each other, which confer special benefits and penalties:

Allies can pick up cargo spilt from other members' ships without it being flagged as stolen goods

- ♦ Only cargo ejected after commanders become allies is treated this way

Allies in the same location gain the same criminal status and penalties for acts any one of them commits

Creditors

There are different types of creditor

Neutral: every docking location has a neutral creditor who offers:

- ♦ to pay the excess fee amount up front in return for a percentage of all future sales until the loan and interest is accounted for
- ♦ to do the above but include a credit sum to help the player get back on their feet
- ♦ The credit sum is equal to the value of the excess
- ♦ Additional uses of the neutral creditor simply increase the debt
- ♦ There is a debt cap, beyond which debt is written off
- ♦ To give the player a Sidewinder ship with basic equipment fitted

REAL FREEDOM

Go where you like, be what you like - pirate, bounty hunter, trader, assassin, or a mix of all of these.

TRADE: Buy low, cross dangerous space lanes, evade or destroy pirates en route, then sell high, if you make the journey!

FIGHT: Take on the pirates or be one yourself.

PROGRESS: Get your pilot rating all the way from "Harmless" to "Elite".

EXPLORE: Head out to the far reaches of space and discover amazing sights.

MULTIPLAYER: And the best part - you can do all this online with your friends, or other "Elite" pilots like yourself, or even alone. The choice is yours...

Factional: some docking stations have Federation/Imperial/Criminal affiliated creditors who offer:

- ♦ To pay an excess fee amount up front in return for services rendered (Repayment Missions)
- ♦ To do the above but include a credit sum to help the commander get back on their feet
- ♦ The credit sum is equal to the value of the excess

Repayment Missions

Repayment missions are offered by some creditors and:

- ♦ Are only available when the creditor's faction relationship is above a set threshold
- ♦ Are always timed
- ♦ Reduce the creditor's faction relationship if failed (potentially triggering additional adversarial events)
- ♦ Can involve adversarial activity against opposing factions
- ♦ Can be "bought out" by paying a lump sum equal to the debt, though some faction loss will still occur

Ironman Elite

During commander creation the player may set the "ironman" flag. Ironman commanders can never be grouped with normal commanders. Players can use the same name for both normal and ironman commanders.

Escape pod systems can be damaged and made inoperable (they are still invincible once launched)

Escape pods are disposable: after use, a new pod can be purchased

Escape pods must be manually activated

Failure to use an escape pod permanently kills the commander if the ship suffers catastrophic hull damage (breaks apart)

- ♦ Permanently killed commanders can be resurrected as a normal commander (no ironman flag), continuing from when they died
- ♦ Ship warning systems and visual/aural cues activate when the ship nears total operational failure
- ♦ The commander is not killed by any amount of ship operational failure

Commanders have emergency personal life support which activates in the event of life support failure

- ♦ Personal life support can only sustain a commander for a limited time, but restocks when the commander is in a breathable atmosphere
- ♦ If a commander's personal life support runs out the commander is permanently killed. ■



REPUTATIONS

Reputations are numerical values representing the consequences of particular styles of play.

Reputations can go up and down, based on commander actions

- ♦ *Some reputations can have negative values*

Reputation values are hidden to the player; they just experience the effects on NPC behaviours

Reputations can affect the following NPC behaviours in either a good or bad way (for the player):

Tones of response, comprised of:

- ♦ *(Bad) Hostile*
- ♦ *(Neutral) Neutral*
- ♦ *(Good) Friendly*

Dialogue option availability/liability of success of various options

- ♦ *(Bad) Fewer options if applicable, less chance of options having good results*
- ♦ *(Good) More options if applicable, greater chance of options having good results.*
- ♦ *Note that some options will require specific reputation levels.*

Determining threat level of player actions near NPC archetypes

- ♦ *Player actions considered are:*
- ♦ *Proximity to NPC*
- ♦ *Scanning the NPC*
- ♦ *Opening weapon bay near NPC*
- ♦ *Firing weapons without hitting the NPC*
- ♦ *(Bad) Having a low reputation in an area the NPC archetype cares about increases the perceived threat from the actions above which could result in a hostile action*



- Likewise, a high reputation in an area the NPC archetype cares about in a negative way also increases the perceived threat
- (Good) Having a high reputation in an area the NPC archetype cares about results in a decrease in perceived threat from player actions
- Likewise a low reputation in an area the NPC archetype cares about in a negative fashion also decreases the perceived threat from player actions

Level of interest in the player, this will affect:

- Likelihood of NPC instigated interactions
- (Bad) Attacking
- (Bad) Scanning
- (Good) Trading if applicable
- (Good) Offering mission if applicable

NPC Archetypes

NPCs use an NPC archetype to determine its responses

Each NPC archetype only considers a small number of reputations and ignore others

Each reputation is considered as a positive or negative

- When considered as a positive, the higher the reputation, the more friendly the result

- When considered as a negative, the higher the reputation, the more hostile the result
- When multiple reputations are considered, the average value is used

As well as reputations, all NPC archetypes take into account the appearance of the player's ship in terms of how well maintained it appears to be

- A high ship appearance gained from a well looked after ship – a low ship appearance is gained from damage/signs of wear and tear
- Some ship docks offer maintenance and repair services, allowing the player to increase their ship appearance at a cost
- Smuggler and pirate space docks offer a "aging" service to lower ship appearance without damaging the vessel
- Ship appearance is treated as a reputation and used by all archetypes to determine response

Example: Police Archetype

Cares about Ship Appearance, Criminality, Smuggling, and Piracy reputations

Acts on Ship Appearance before consulting other elements

- All considered as a negative for tone of response
- All considered as a negative for dialogue options
- All considered as a negative for level of threat
- All considered as a negative for level of interest

Example: Dubious Trader Archetype

Cares about Ship Appearance, Trading, Smuggling and Piracy reputations

- ♦ Piracy considered as a negative for tone of response, trading and smuggling considered as a positive
- ♦ Piracy considered as a negative for dialogue options, trading and smuggling considered as a positive
- ♦ Piracy considered as a negative for level of threat
- ♦ Trading and smuggling considered as a positive for level of interest, ship appearance considered as a negative

Events can be affected by reputation in the following ways:

- ♦ Chance of an event occurring
- ♦ Type of event
- ♦ Severity of event

Reputation Types

Trade

- ♦ Increased by: selling cargo at a profit
- ♦ Decreased by: losing cargo (lost in space or sold at loss)

Smuggling

- ♦ Increased by: selling illegal cargo
- ♦ Decreased by: being detected by authorities whilst carrying illegal cargo

Piracy

- ♦ Increased by: acquiring and using or selling booty obtained through a declaration of piracy (an explicit player option)
- ♦ Decreased by: destroying a ship without first giving the opportunity to surrender by not declaring piracy.

Mercenary

- ♦ Increased by: successfully completing missions for factional navies
- ♦ Decreased by: failing to complete missions for factional navies

Bounty Hunting

- ♦ Increased by: killing ships that have a bounty
- ♦ Decays with time

Assassination

- ♦ Increased by: successfully completing assassination missions
- ♦ Decreased by: failing to complete assassination missions

Exploration

- ♦ Increased by: selling data (new systems, routes, resources, events)
- ♦ Decays with time

Espionage

- ♦ Increased by: performing data acquisition missions
- ♦ Decreased by: failing data acquisition missions

Prospecting

- ♦ Increased by: selling resources mined/refined from space
- ♦ Decays with time

Criminality

- ♦ Increased by: committing crimes
- ♦ Decreased by: voluntarily paying fines, successfully completing atonement missions and events

Humanity

- ♦ Increased by: successfully performing humanitarian missions and events
- ♦ Decreased by: successfully performing opportunistic missions and events that ran counter to a humanitarian effort



Factional Allegiance

A faction has both a reputation value and a Faction archetype, comprising of reputations it is interested in

Faction archetypes comprise of:

- ♦ Federation, Empire and Alliance
- ♦ Corporations
- ♦ Systems (only exist once a player has done something in that system, based on system archetypes: agricultural etc)
- ♦ Organisations (exist entirely in the events system)

A faction's reputation value increases and decreases based on performing actions within their awareness (jurisdiction, NPC involvement) that the faction is interested in according to their archetype

Faction reputation ranges from a negative to a positive value

Factional reputations are considered by NPCs with allegiance to that faction

The faction reputation value is applied as a modifier to all other reputation values when determining NPC response based on reputation

Becoming Elite – Ratings

The "Elite" rating is a combat rating based on the number of successful pirate kills by a pilot. To get this rating requires a great deal of dedication. Additional routes to an "Elite" rating and that coveted membership were introduced in 3290.



Three new possible "Elite" rankings, in addition to the combat effectiveness rating (still based on number of kills using a player rating and ship formula) now cover new key areas:

- ♦ *Wealth: profit over accumulated net worth (though both values are taken into account)*
- ♦ *Influence: based on contacts and successful negotiations or diplomacy.*
- ♦ *Knowledge: acquisition of data, particularly through exploration.*

Getting the Elite rating (in any of the four rankings) automatically gets you into the exclusive "Elite Federation of Pilots" – and being a member of the Elite federation confers many privileges. It is also possible for pilots without the "Elite" rating to gain admission to the EFP, but access to the organisation is extremely difficult: one must show extraordinary promise as a pilot to be admitted.

- ♦ *The pilot ratings are displayed openly if the pilot selects their rating to be public*
- ♦ *If the player selects their rating to be private then it is only revealed via a scan*

These values never decrease

Once admitted the pilot will be awarded a badge including the "Elite" logo, but with their current rank below. It is expected the majority of these will be "Elite: Dangerous" and "Elite: Deadly". Those with an "Elite" rating get the original, unadorned badge.

The different ratings have their own badge colour

Once admitted to the EFP, elite missions/events become available to the event generator

Successful resolution of elite missions/events will increase a hidden elite value

In general, elite missions/events are not tied to any particular location or gameplay area, and are given context as having come through the EFP's good offices (see the Pilot's Federation document for more detail)

There will be missions available from the EFP to non-members, and will be presented as tests that will help gain admission. Elite missions/events are more likely to be generated for pilots with suitable reputations in specific areas (mercenary, bounty hunting, assassination, smuggling)

When the elite value is high enough a commander is invited to join the Elite Federation

Elite level missions will be unlocked once the commander has entered the Elite federation to give them new content to experience

Summary

Ships in the Elite Dangerous galaxy communicate through text "comms" messages and audio (player to player only – initially at least)

These can be quick messages granting permission to dock, or long exchanges debating a mission or deal

There will be two types of communication interaction in the game: player to player and player to NPC. ■



HARMLESS



MOSTLY HARMLESS



NOVICE



COMPETENT



EXPERT



MASTER



DANGEROUS



DEADLY



ELITE

BADGE OF HONOUR

As a recent inductee to the Pilots Federation, there are some things you need to know about your new organization.

Formed in 2805 after the great surge in private ownership of smaller starships, the Pilots Federation soon found a role as a conduit for trade route information exchange between trusted pilots and provided the infrastructure for a mutual protection scheme against the rising scourge of interstellar pirates.

Planet-siders began to distrust the generally itinerant nature of starship captains, who always seemed willing and able to jump to a new system before the law caught up with them. The Pilots Federation's zero tolerance policy of dishonourable behaviour amongst its members is enforced by a system of bounties automatically placed on the heads of transgressors.

This built a galaxy-wide respect for the badge, which then started to be worn with pride by members. However, the organization's official adoption of the 9-level 'kill tally' ranking system (Harmless through to the coveted Elite status) ensured the Pilots Federation retained a level of blood-thirsty notoriety.

Over the centuries the Pilots Federation has remained secretive in nature and neutral in conflicts, and has grown into one of the dominant financial superpowers of the galaxy through its GalNet data network. Originally a star chart, ship data and bounty management

system, GalNet has evolved into an effective galactic infrastructure and content monopoly on news, market pricing and communication systems. This has not been without controversy, with periodic claims of data hoarding and abuse of its position.

It's not surprising that an organization founded on status, and with such influence and power, has several cliques (The Dark Wheel being the most infamous). Or that those of Elite rank have further exploited their status and the incredible demand for their services, by forming an organization within an organization; the Elite Pilots Federation.

Relentless, increasingly well organized piracy and the need to maintain their reputation and influence as the best of the best caused the Elite Pilots Federation to start opening its membership to candidates from the Deadly rank who were able to pass a rigorous test and then, as demand continued to soar, to those from the Dangerous rank.

The Pilots Federation has eschewed being tied to any particular system in favour of roaming the stars. With one exception – the Founders World.

The elusive Founders World system is governed by the Elite Pilots Federation, and run exclusively for the benefit of their members. Its location is closely guarded, heavily protected, and the subject of extensive misinformation on GalNet.

Maybe one day you'll be one of the Elite who get to go there. ■

PILOTS FEDERATION RANKINGS



INTRODUCING THE GALACTIC

There are three major power blocs that



THE EMPIRE

Originally founded by Marlin Duval, who led the colonization of the Achenar system in the mid 23rd century, the Empire is based on a 'cliens' system. Society is strictly stratified, with people being able to move between strata (lower strata particularly) based on money, patronage and influence.

The Empire values both status and honour very highly indeed. So whilst it is acceptable to flaunt wealth, treating people well is a question of honour – and this includes slaves. Having an unpaid debt is seen as utterly dishonourable – an honourable Imperial citizen would sell themselves into slavery to clear a debt they couldn't otherwise clear.

Law is seen and enforced very differently in the Empire. Senators are responsible for enforcing the Emperor's laws, but the Senators themselves are above the law. They can order executions, and can even kill people themselves, though sometimes (rarely) they may be held to account for their actions by the Emperor. Some Senators are warlike and may take over systems in the name of the Empire, to get the spoils, and they may get a good deal of support as a result. Some Senators do not tolerate slavery, and regularly speak out against it, but from the basis of honour - not suggesting it should not be legal.

In the Empire, very little is illegal, but many things are frowned upon, like excessive use of narcotics.



POWER BLOCS

you will encounter in the galaxy.



THE ALLIANCE

The Independent Alliance of Systems arose out of a need for cooperation. Centuries of warfare and both Imperial and Federal meddling in a great many otherwise peaceful independent systems caused various small alliances to form and then get broken up over the centuries.

The Alliance formed from a number of culturally different systems with a unified goal – to provide a stronger voice in the galaxy for its member systems and ultimately to defend them against unwelcome attention from the big powers. The Independent Alliance is culturally very varied and leadership of the Alliance (the presidency moves between member systems annually) has been described as ‘challenging’. Seeking agreement between the member systems is generally a tortuous process, usually ending up with a great deal of compromise.

Militarily, cooperation has been more successful. Each member system contributes a portion of its navy to the Alliance Defence Force – the total contribution proportional to its GDP. It is led by the six-strong Council of Admirals (one from each of the largest member navies), but they can act swiftly without government approval, which has proved very effective, and over the years there has been little disagreement between the admirals.

Contributed vessels generally bear the decals of their own navy, but have an additional Alliance Defence Force decal applied while they are with the group – so the culture of identity and independence (and rivalries) applies here too.



THE FEDERATION

To an outsider, the hierarchy of Federation society is based on democratic principles - people vote within their System/State to elect Congressmen, and a President with an 8-year term and a 'vote of confidence' after the first 4 years.

However, corporate loyalty oils the machine, and Federation space is a battleground of commerce. Commercial organisations compete as aggressively as the law will allow for the time and attention of the Federal citizen, who goes through life bombarded by advertising.

Corruption is not unusual – individuals defend it shamelessly when caught as ‘getting one over the system’. Social class is only determined between ‘haves’ and ‘have-nots’. There is a lot of poverty about, as well as conspicuous wealth.

The huge gross domestic product (GDP) of the Federation economy funds a large, well-equipped Federal Navy which projects its values and influence.

Culturally the Federation is tolerant of some things (like religions) but utterly intolerant of drug-taking, political activism, and certain cultures. A great many things are illegal, like slavery, cloning and certain narcotics.

Federal law is based on an agreed Constitution. People have rights and freedoms, enshrined by this agreement. Local ‘State’ law prohibits other trafficking to a greater or lesser degree. Things like ship-based weapons, personal weapons, other milder drugs and alcohol are banned in some systems.

The media drives a culture of celebrity. Top ranking politicians, social commentators, entertainers and super-rich all command a great deal of media attention. This provides a massive distraction for the populace, to the extent that foreign wars conducted by the Federation on their behalf get little media attention. This has gone on for many hundreds of years, and there is no sign of it changing.



COMMUNICATION INTERACTION

Player to Player

Players can lock onto and hail any other player's ship that is not ignoring them

Players can also select players from their friends list to open up direct communications with

Players can accept or decline communications

They have three ways of communicating:

1. They can choose to type messages to each other freely
2. Voice chat

3. Preconfigured messages

- These will cover all common interactions between players like asking for assistance, offering trade and declaring piracy
- These will allow players to carry out deals and agreements quickly and easily by picking presets
- New preset options will arise from having higher reputation values in certain areas

Player to NPC

Talking to NPC would be handled entirely by the preset messages system.

Conversations happen either when the player hails an NPC and they respond and vice versa



Players will choose from a number of options and the NPC will automatically respond, they will take reputation into account when deciding their response.

- Reputations can also affect the general tone of interaction with a particular type of NPC, a trader being hostile to a pirate for example.
- New conversation options can become open to the player as their reputation values change, this could include options to bluff, bribe and haggle.

Choices made in these interactions will have real consequences for gameplay, each choice could have a different outcome in terms of gameplay.

Lack of response (usually 5 seconds) will also be considered a message by an NPC.

Visual Communication

Players can apply directive visual tags to ships they have targeted, that can then be seen by other players. These tags can convey the following messages

- Attack this ship/station
- Defend this ship/station
- Scan this ship

Abusive Language

There should be a local abusive language filter that hashes out certain words that appear in messages from other players. ■



GROUPS

A player can only exist in one of the following groups at a time.

ALL PLAYERS GROUP – Players in this group will be matched with each other as much as possible to ensure as many human players can meet and play together

A player's Friend List and Ignore List is used automatically to indicate preferences in match making so that friends will be matched instead of others if a choice exists (though this is a fuzzy system so there are no guarantees)

- E.g. In a nearly full session a player with more friends in the session than that of another arriving at the same time would mean the first player getting in and the second spawning a new session instead

Players can use an option to indicate they would like friends of friends to be included in the preference system described above (which basically expands their friends list for the purposes of preferences under the hood only)

Players playing on 'Iron Man' mode will only be matched with other 'Iron Man' mode players

PRIVATE GROUP – Players in this group will only be matched with other players in the same private group

Players can create their own private group and invite people into it

- To help facilitate inviting players into a private group, players can be indicated as friends in game and can be selected easily for sending invites out too
- Any player can be invited into a private group regardless of friend status so player name searching and direct in-game selection is possible
- A player who accepts such an invite will be removed from their current group upon the next hyperspace jump and be placed in the private group of the inviting player
- A player who refuses such an invite will remain in whatever group they were already in and the option to ignore future requests from that player during the current gaming session is presented

- Players can only invite other players of the same type (normal, iron man) to a group

Players can save private group settings including players to invite to allow quick selection and set up of groups

A player can set an option to allow friends to "quick join" into their private group

- They can change this option at any time
- Players will be able to see on their friend list that other friends are in private groups and that some may have a symbol indicated they're free to "quick join" into the group without needing an invite
- The "quick join" option can be extended to allow friends of friends in freely also

A player wishing to join another player's private group will have to message them asking for an invite as there is no way to formally request admission into the group

- Players will thus typically set the "quick join" option if they don't want the hassle of their friends having to message them when they want to join in with the group

Only the original private group creator can invite others into their group. They can also do the following:

- Kick other players out of the group
- Disband the group resulting in all the other players entering their own individual private groups with "quick joining" disabled (gives them the opportunity to play solo or decide to join the all players group)
- Pass their leadership and thus all these options to someone else in the group
- Upon disconnecting, logging off or leaving the group automatically passes leadership to the oldest private group member, i.e. the first player to accept an invite into the group that is still present

When creating a group the player creating it can decide how the group will react to crimes committed by players while in the group

- The player can decide to either count only crimes committed against other players, or against AI ships
- The player can decide if a player who earns a bounty is either kicked back into the all players group, or can be kept in the private group

SOLO GROUP – Players in this group won't be matched with anyone else ever (effectively a private group with no one else invited) with the following properties:

Players in this group are effectively indicating they want to be left alone and not disturbed by anyone else

By default group and friend invites are ignored but this can be enabled if desired

By default a player's online status is hidden (set to offline) from others but this can be change if desired

A player in this group can still see when other friends come online and can message them

A player in this group can still receive messages from friends (possibly revealing the fact that they are online by virtue of return messages but still indicated as being offline)

As described above a player also has a Friend List that they can manage which helps facilitate inviting players into private groups and allow preferences to be taken into account when joining sessions:

A player can request friendship with others

An accepting player will add themselves to the player's friend list as well as adding the player to their own list as well

A refusing player will remain off the other player's list and the option to ignore future requests from that player during the current gaming session is presented

A player can remove a friend from their list at any time and such removal will also take them off that friends list at the same time

Requesting a friendship can be done inside and outside of the game client

Friends will be matched with each other as much as possible when entering new sessions

- If a choice needs to be made between which players to allow access to a session the player with the most friend influence will trump a neutral or ignored player

Players Friend lists are based on player accounts, not player characters

- A player also has the option to add players to an Ignore List which does the following:

Removes any friendship between the players automatically (players can't be friends with players they ignore)

Ignores all communication from them in game

Ignores any friend requests from them

Is active across multiple gaming session until changed by the player (this is different from the options presented in the above sections as they only last as long as the current gaming session)

People on others ignore lists will not be favoured if a choice exists when match making players together

- If all players in a session have the same player ignored then that player will never be able to join that session
- If at least one player is neutral or friends with the ignored player above then they will be able to join that session providing there is no better suited players trying to get in at the same time when only one slot is available

If a person earns a bounty their ignore list and friend preferences won't affect matchmaking, and bounty hunters will still be able to

encounter the player, even if the bounty hunter is on the player's ignore list

If a player is in a session with another player on their ignore list they will still receive messages relating to that players in game actions and pre-canned dialogue, such as declarations of piracy

If a player follows another player's hyperspace trail, the ignore rules cannot be applied to them. The players will join their next session as a group

Players Ignore lists are based on player accounts, not player characters

In addition to the groups presented above a player can be a part of an Alliance with other players. This is a separate entity that operates within the boundaries of whatever group the players are in:

A player can only ever be in a single alliance at a time

Alliances allow players to indicate trust between themselves so they:

Can freely jettison and pick up cargo between themselves

Can fire upon each other without criminal implications

Gain the same criminal fine/bounty if one or more other members commits a crime

- This only occurs if the player is in the same vicinity as the player committing the crime

Have the ability to slave hyperdrive systems together to make travel easier

Get matched as a whole during slaved hyperspace travel and if not possible spawn in their own instance at a location rather than splitting the alliance up

Alliances in the all players group allow those in the alliance to come across other human players as normal except the game is explicitly trying to keep the alliance together when they arrive at the same location through match-making

- This is in addition to the normal preference system and operates by giving a much higher weighting to alliance members when determining preferences over friends for example

Alliances in a private group would only meet other players in that private group

- Depending on the size of the group, players may typically be in an alliance with everyone else in the private group but multiple alliances can exist in a larger private group if desired

Creating an alliance is handled exactly the same way as creating a private group with the caveat that anyone in the group can invite other players (including non-friend players) into the alliance and no one is the leader

In the all players group any player can be invited into the alliance by any alliance member

In a private group only the players in the private group can be invited into an alliance by alliance members

Players can vote to kick an alliance member out of the alliance

- After a set time limit the vote is closed and the majority is taken to decide the outcome unless all members have already voted or the required number of votes is reached

Players can leave freely of their own accord

Any criminal status or reputation earned as a consequence of other alliance members behaviour is kept after leaving an alliance. ■

PLAYER LOG



Having a player log will:

- Provide a place players can view and sort through their in-game achievements.
- Allow players to quickly and easily reference past events.
- Allow us to track events for use with the background simulation.

How will it work?

For the player log to be useful, it has to be a reference for the player. Players should be able to look at past events and useful locations, and find out when specific entries happened and with whom.

All entries will have metadata for location, time & date, NPC names, etc., so that they can be hooked into other in-game systems:

- Useful Locations – players should be able to select a log entry and be shown the location that the entry took place.
- Information on NPC's – if an NPC has been met before, the log entry should be viewable through the targeting interface.
- Points of Interest (POI) – any discovered POI that is highlighted on the galaxy/system map should link to the relevant entry in the log (date and time discovered, description), and vice versa.
- Faction data – any significant changes in reputation or events within a faction should link to new feeds for that event.
- Mission links/data – any event that links to a current mission.
 - More mundane data should be logged as well, so that players have a list of achievements that they can view at a glance.
- Profit and loss made on trades.
- Changes in ratings/rank/reputations.
- Criminal activity (e.g. witnessed crimes, police responses)
- Etc.

Each player log entry will have a limited life span, and will eventually be removed from the log after a TBD amount of time. The log itself will be represented in a list, on a screen that can be reached via hotkey. Each new entry will be displayed on the cockpit HUD briefly, so the player is aware that one has been added.

Types of Log Entry

NPC Entries

Whenever a player interacts with an NPC, a log entry will be created:

- NPC name, location, type of interaction and the result of that interaction will be collected.
- The AI will have a small number of actions that they can decide to do in each situation.
- Only significant actions should register data, accidentally grazing a ship shouldn't get added to the log.
- A coherent entry will then be created for the log, for example:
 - Traded with NPC A at Lave, made 10,560cr profit.
 - Declared piracy on NPC B in the Sol system, he dumped his cargo and fled.
 - You were attacked by pirate NPC C at Barnard's Star.
 - NPC D saved from marauding pirates.

Mission Entries

Whenever a mission event happens, a log entry will be created:

Location, type of mission event and the results will be collected.

- Missions will have an entry for acceptance and completion, as well as any major events during.
- There may be overlap with NPC entries.

A coherent entry will then be created for the log, for example:

- Accepted Federation mission to deliver food to Lave, from the Jupiter orbital bulletin board.

- Successfully cleared out all pirates from their base at Alpha Ceti.
- Delivery of Item A failed, you dumped the cargo in the Sol system.

Event Entries

Whenever a player event happens, a log entry will be created:

Location, type of event and the results will be collected.

- Events (discoveries, encounters and in-space happenings) will have an entry when they start. Any other entries will be created depending on the type of event.
- There may be overlap with NPC entries.

A coherent entry will then be created for the log, for example:

- New discovery: A derelict space ship found in the Sirius system.
- You were attacked by Player A outside Rogan Station.
- You've stripped an asteroid in the Kuiper Belt of all mineable materials.
- Asteroid 101B scanned, contains X.

Achievement Entries

Whenever a player achieves something significant, a log entry will be created:

Location and type of achievement will be collected.

- An achievement would need to be significant in order to be logged. For instance, managing to dock on a station would not be log worthy, but reaching a new rating would.
- Achievement log entries can be positive or negative.

A coherent entry will then be created for the log, for example:

- You have arrived in the Barnard's Star system.
- You have lost reputation with the Federation.
- You lost 3,450cr selling Battle Weaponry at Saturn station.
- Congratulations! Cobra Mk III has been purchased.

Filters & Ordering

Filters will be included with the player log, so that entries of a certain type or collection of types can easily be found. Multiple filters can be setup to allow finely tuned searching.

Filtering by type of entry:

- Related to NPC's
- Related to Missions
- Related to Events
- Related to Achievements

Filtering by elements:

- Financial
- Combat
- Discovery
- Rank/Rating
- Reputation
- Criminality

Filtering by player role:

- Mining
- Smuggling
- Trading
- Piracy
- Bounty Hunting
- Assassination

Every log entry will have a time & date stamp, the log will be maintained in time and date order, which can be switched between 'newest -> oldest' or 'oldest -> newest'. This ordering will also be maintained whilst using filters. ■

RATE vros - 34.2/58.6 • bst - 100.38/100.38 • ckst - 96.4/96.2 • vgst - 138.7/147.2 • gstd - 82.3 MED flox - 229.3/227.4 • heliotrope - 781.1/782.3 • ryder wh - 34
 NEWS Grains found this morning, the trial continues. • Technology: Faulcon Delacy claims breakthrough on quantum space folding research. • Education: Hawell

CARGO

Goods	4/5T
Hydrogen	2/4T
Grain	1/4T
Fuel	1/5T
Cabin	0/5T
Free	0/5T
Used	5/5T
Fuel	1/5T
Cabin	0/5T
Free	0/5T
Used	5/5T

Your account balance: 1500cr

TRADE HISTORY
[HYDROGEN]
 Robert Station - Sector I54

BOUGHT FOR 18 = 108cr PROFIT.
 DEMAND - MED/LOW
 POTENTIAL PROFITS - 0.02cr

CARGO HOLD 1:53:02

GOODS

- Agriculture
- Alcohol
- Electronics
- Foodstuff
- Fuel
- Industry
- Life Support
- Medical
- Waste

TRADE HISTORY

MARKET ANALYSIS

COMPARATIVE [PRECIOUS METALS] - [24m] - CURRENT

LOCAL MARKETS

DOXA STATION	3AU	32 - +/-0
TUR COLONY	6AU	54 - 22%
KARP3	0.4AU	30 - 0.8%

HYDROGEN

28 months

MARKET PRICE

INCOMING SHIPMENTS

DEMAND: 3,000K VOLATILITY: MED-LOW

HIGH / LOW: [24MONTHS]: 4.6 / 0.02 - CURRENT 32 - 83%

TRADING

Goals

Simple to use – the actual mechanisms of trading should be easy for the player to grasp. The complexities in trading come from the choices that the player makes.

Provide interesting choice – trading should provide the player with interesting, but understandable choices.

Risk/Reward – trading is a risk vs. reward activity and should provide the opportunity for players to balance risk with potential rewards.

Impact the game world – player actions should have a noticeable effect on the game world. They enable player choices to determine the fate of aspects of the galaxy.

Markets

Markets are where the majority of trading takes place

They can be space stations, very large ships, or any other suitable structure

Markets come in a variety of types which determine which goods can potentially be present – ie not all markets include all goods categories

- Space Stations – trades commodities and essential ship supplies
- Shipyards – trades limited commodities, ships, ship modules, ship supplies
- Factories – Specialist markets for particular commodities.
- Black Markets – private markets accessible based on player reputation, trades illegal commodities, requires contact to access, can be part of a legal market

- Pirate Bases – ignore fines and bounties, commodities, trades illegal commodities, requires contact to locate
- Smuggler Bases – ignores fines, but not bounties, trades commodities and illegal commodities, requires contact for location – the background simulation determines some properties of a market

The list displayed for the market is determined by:

- Legality: Commodities of allowed types only are shown
- Profile: Commodities appropriate to the location are shown
- Supply/Demand: How much is for sale and what the current demand for an item is at the given price

Some markets will be indicated as specialist in some way. This usually means the availability of rare items.

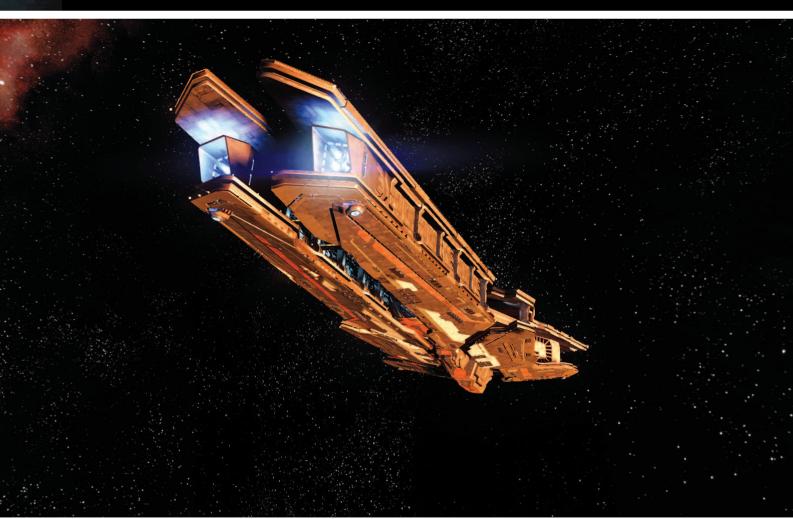
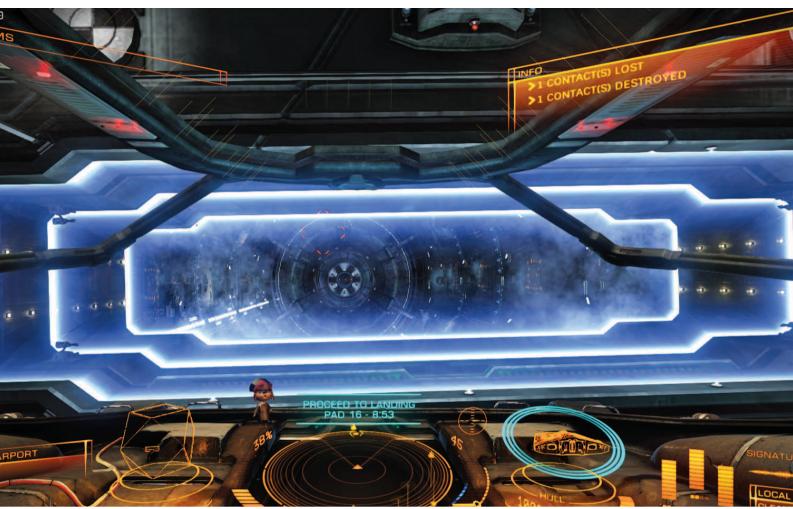
Prices shown on the market:

Prices on the markets are fixed, based on the price for the displayed demand

Markets will have different modifiers and mark-up values

Players can attempt to change the offered price (for buy and sell) by contacting a dealer in a specific good. This can also mean that the supply (or demand) values can be exceeded – ie a dealer may be prepared to buy more than the demand level at a lower price. Specialist items that fall into a standardized category should be sold through a dealer as otherwise they will attract the standard price for their category.

- Using the negotiation changes the price by a value derived from the trading reputation too – as long as the amount is worth their while (this will be settable value – probably if over 50% of the market demand)



Freight missions available from markets for transporting goods for a reward

- Missions to be discussed in detail in future topic.
- Although a reasonable spread of missions will always be available.

To determine a market's properties the background simulation takes into account the following system data:

Supply and demand based on market location, e.g.

- Agricultural location
- Supplies Food
- Demands Machinery, Fertiliser
- Politics/laws
- Determines which commodities are illegal
- Population size and standard of living
- Increases supply and demand of specific commodities
- Meta events like conflicts and disasters
- Affects commodity availability and prices
- Can be generated by player actions
- Aggregated Player trading in the system

Market data availability

- When docked all available market data is available
- This may be modified by ranking
- When in system market prices are available
- Outside the system only general information is available
- Player's trade history is available in detail
- Newsfeeds provide useful economic data for all systems

Market Data Content

- Historical data will be aggregated
- Full price data for limited time
- Then aggregated for full timeline

Players can cancel a trade before leaving the trading screen

Players can dump cargos at substantially reduced value if it cannot be sold through the market normally.

- Some dangerous cargos may need a fee to offload
- Jettisoning cargos within a defined distance of a station is illegal

Commodities

There is a list of different commodities

Each commodity has a baseline price

- This is the starting price for the commodity in this market
- This value is modified by background simulation
- This value is modified by player trading
- Buy and selling price is modified by the quantity of a commodity being traded
- Repeated sales of the same commodity by the same player in the same market will be blocked
- There are caps on prices to prevent unrealistic extremes (no negative values)

Based on background simulation data, rare alternate commodities can be generated

- These commodities' value increase the further the player is from the origin system
- Value rarity modifiers are capped

Quantities of commodities that are purchased are limited by the player's currently active ship's cargo capacity.

Modules can be traded (although not when equipped)

Some commodities require specialist ship equipment

- Attempting to transport commodities of these types without said equipment has effects:
- Spoiling – the commodity is ruined
- Alteration – the commodity changes type
- Contamination – the commodity becomes hazardous
- Packets of information can be obtained and traded like commodities
- Tradable information includes:
- System locations
- Market locations
- Resource gathering locations
- Mission/event locations
- Information packets automatically update the player's galactic map as needed when they are acquired
- Using a purchased packet means it cannot then be resold.

Player to Player Trading

Players can trade directly with each other

- The player trade interface is available when both players are docked at the same market
- The player trade interface is available when two players dock ships

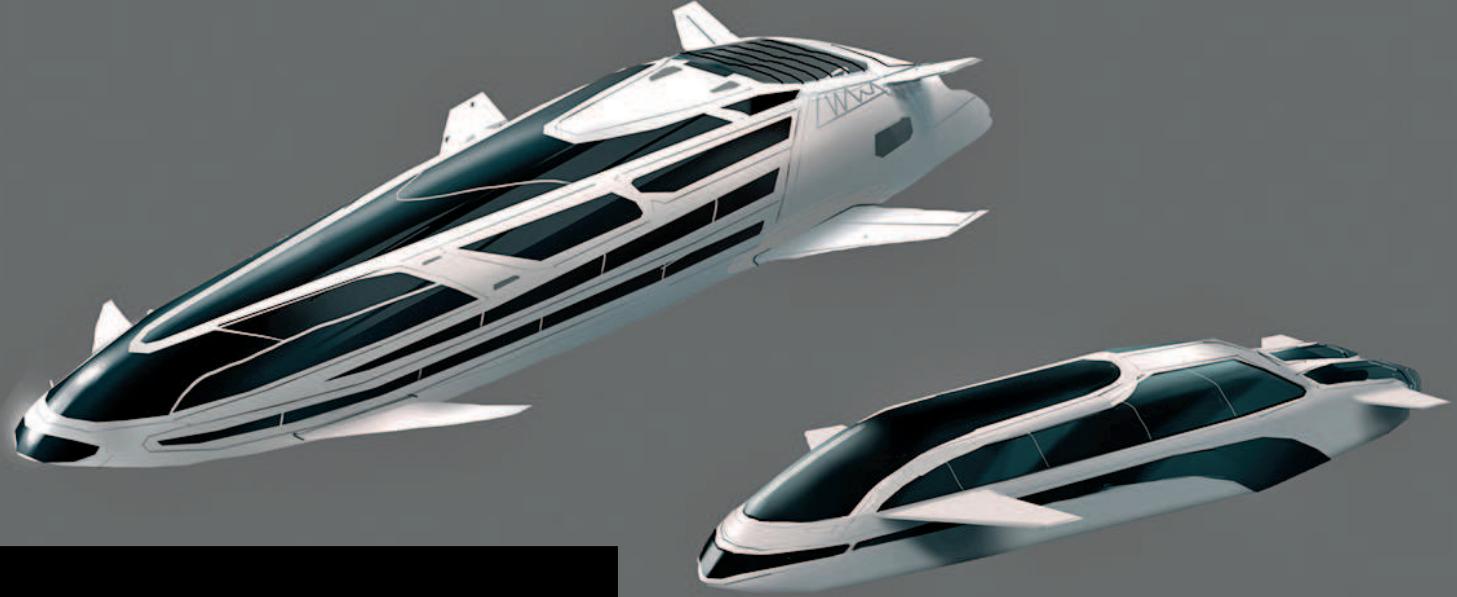
The player trade interface is a secure swap allowing players to transfer credits/cargo

Both players must accept the trade before it occurs

- Acceptance must be redone by both parties after any change in the trade

Trading occurs in real-time and can be interrupted (for example by being attacked) unless taking place at a space dock

Either player can cancel the trade at any time up to the point both agree. ■



PASSENGERS IN ELITE: DANGEROUS

Players can carry passengers between destinations as a way of earning money (or other valuable resources) in Elite: Dangerous. Players can carry passengers in their ships cargo hold, in stasis tubes or in rudimentary cabins, but this is considered a fairly rough way to travel and allows players to transport passengers from A to B for a basic fee.

Passenger liners represent the state of the art in terms of luxury travel. Liners can be fitted with a range of high quality cabins. These can be fitted with a range of high end passenger cabins, and feature a number of features to keep passengers comfortable and entertained. The player can also fit their liner with a large number of basic cabins to use it for mass transit.

Passengers that are not in stasis will offer the player missions to complete while they are on their journey. Passengers travelling in higher quality cabins will offer the player missions to the player more frequently, and for greater rewards.

CABINS AND QUALITY OF TRANSPORT FOR PASSENGERS

The player can fit their ship with a number of different cabin types. Some ships can only fit the most basic types of passenger transport, but luxury liners are free to choose from the entire range. The better the quality of the cabin the more a passenger will be willing to pay to travel, but the more expensive, spacious and heavy the cabin module will be (Occupying more space in the players ship, and limiting the player's options to fit other modules)

THE TYPES OF CABIN AVAILABLE ARE:

Class 1 – Stasis tube Rack

- This is a powered cargo rack that the player must fit in their cargo hold. It allows the player to carry two passengers per rack, transported like cargo
- Passengers in stasis tubes will not offer the player missions en route
- Stasis tube racks can be fitted in any type of ship

Class 2 – Basic Passenger Cabin

- This powered cabin allows a single passenger to be transported in a conscious state. The cabin features rudimentary facilities
- Passengers in basic passenger cabins have a low chance of offering the player low paying missions en route
- Basic Passenger Cabins can be fitted to any ship type

Class 3 – Travel Cabin

- This powered cabin allows up to two passengers to be transported in a relatively civilised state. This is the equivalent of travelling second class today
- Passengers in basic passenger cabins have a chance of offering the player medium paying missions en route
- Travel Cabins can only be fitted to Liners

Class 4 – First Class Cabin

- This powered cabin allows up to Four passengers to be transported in high quality surroundings. Players have a number of facilities and services available to them, automated by the room
- Passengers in First Class cabins have a good chance of offering the player medium to high paying missions en route
- First Class Cabins can only be fitted to Liners

Class 5 – Luxury Cabin

- This powered cabin allows up to Four passengers to be transported in absolute luxury. Years of research into human pleasure has resulted in the pinnacle of luxury travel arrangements
- Passengers in luxury cabins have a high chance of offering the player high paying missions en route
- Luxury Cabins can only be fitted to Liners

WE'RE TAKING ON PASSENGERS AT PERSEPHONE?

Historically ships in Elite could be separated into one of three categories; combat ships, traders, or more general multi-role vessels. With Elite: Dangerous we will be adding an entirely new range of ships, specifically designed for transporting passengers.

Passenger ships will generally be lightly armed but fast and luxurious, providing players with the lucrative potential to carry wealthy passengers (assuming you can get your passengers to their destination safely!). This could be in cooperation with other players, by them providing you with an escort, or by risking the journey alone for greater reward. We look forward to sharing more with you on Passenger-Class Ships and how they will work in Elite: Dangerous in future updates.

FINDING AND ACCEPTING PASSENGER CONTRACTS

Players can find passenger contacts in a number of locations around the galaxy by docking and checking a locations bulletin board. Passenger contracts will appear there.

Players must dock at a station or other location in order to accept passenger contracts

The player selects the bulletin board from the menu once docked and selects the travel page

Available contracts are listed here and can be filtered by distance of destination, reward value, # of passengers, deadline, previously flagged etc.

Each of the passenger contracts will have a small number of relevant details listed under it's heading

Selecting a contract will open a page with all the details of the job including:

- ♦ Contacts name (the name of the NPC that posted the contract)
- ♦ Departure Location (This should be the players current locations unless there is some special pickup condition attached to the job)
- ♦ Destination (With the distance from the departure listed)
- ♦ Deadline for delivery
- ♦ Money Offered
- ♦ Number of Passengers
- ♦ Minimum class of transport
- ♦ Deadline for completion of the contract
- ♦ Other Information

From the details page of a job the player can select to either flag the task (highlighting it for later) or can select to contact the poster of the job

- ♦ By communicating with the original poster the player can begin negotiating the terms of a passenger contract
- ♦ Players can discuss the following terms:
 - ♦ Negotiate price
 - ♦ Negotiate Deadlines
 - ♦ Time of payment (on completion, half advance, full advance, based on reputation)
 - ♦ Information on any Expected Risks
 - ♦ Information on any missions passengers might have
 - ♦ Any required permits (The passenger will provide one if they can get it, although they may ask the player to enter an illegal area without)
 - ♦ Deadline for completion
 - ♦ Accept or Reject the contract
 - ♦ Different clients may be more or less flexible on certain aspects of their contract
 - ♦ When the player selects to accept the contract the passengers will be loaded into the players ship

- ♦ If the players ship does not meet the requirements for the contract (e.g space for passengers, facilities etc.) the contract will be cancelled and the player will be informed of the cause for cancellation
- ♦ The player can accept as many contracts as their ship's capacity and facilities allow

DELIVERING PASSENGERS

Once passengers are loaded into a players ship they must deliver them to their desired destination to complete their passenger contract. Passengers in stasis are delivered simply to their destination, however passengers who are being delivered in liners will have additional missions to offer the player along their delivery

With Passengers in stasis the player must fly them to their destination within the time of the deadline for completion

- ♦ Players must fly to and dock at the destination specified in the contract
- ♦ Once docked the passengers will disembark
 - ♦ The players will receive any payment due and a message from the passengers
 - ♦ The players reputation for passenger delivery will increase
- ♦ With conscious passengers the player still has a destination (or multiple destinations) to deliver their passengers to
 - ♦ Once on board passengers will offer the players missions to earn rewards
 - ♦ Players can acquiesce to a passengers mission or can ignore them
 - ♦ Passenger missions can trigger certain events, such as ambushes or pre-arranged meetings with other ships
 - ♦ Passenger missions can chain into a sequence of connected missions
 - ♦ Passengers may make requests to the player based on events the player encounters
 - ♦ E.g. Passenger is a Federation Officer. Will ask the player to intervene with any Federal requests for aid
 - ♦ The player may receive multiple missions from passengers on a journey

If the deadline for completion should pass without the player completing the contract the passenger contract is failed

- ♦ Depending on the players proximity to the passengers destination and current situation (surroundings, ship status, and previous extensions). They may offer the player an extension on the contract with a re-negotiated reward
- ♦ The player will lose a small amount of reputation for being late
- ♦ If the player is too far from the destination, or in an undesirable situation the passengers will demand that the player delivers them to the nearest settlement
 - ♦ Failure to allow them off your ship will result in a crime being logged against the player
 - ♦ The player will lose a larger amount of reputation for non completion

If the players ship is destroyed with passengers on board the passenger contract is considered failed

- ♦ If passengers are on board the players ship when it is destroyed they are killed
 - ♦ The player will lose a large amount of passenger delivery reputation if passengers are killed while on their ship
 - ♦ Players can order passengers they have on board to abandon ship
 - ♦ Passengers will enter escape pods. These can be collected like cargo containers for a short period, allowing the player to continue the passenger contract after the danger has passed
 - ♦ If the player's ship is destroyed while passengers are in escape pods they will be recovered to the nearest safe location (like the player if they use an escape pod) and won't die
 - ♦ The Passenger contract will be over and the player will not receive a reward, but the player's reputation will not suffer either.



EXPLORATION

In Elite: Dangerous explorers are players who travel out into undiscovered areas of the galaxy, hoping to find previously undiscovered systems and locations. Explorers scan and record data wherever they go, and can sell that data on to various interested authorities. Explorers can also sell on data they have discovered to other players, allowing them to sell the co-ordinates of a valuable find to the highest bidder, or keep their discoveries to exploit for themselves.

Explorer players must discover different points of interest using different methods.



Explorer players' main method of making money is through selling details of points of interest they discover

Points of interest players can discover include:

- ♦ Star Systems
- ♦ Dark Systems (systems without a star, but other features)
- ♦ Stars
- ♦ Planets

- ♦ Asteroids, comets
- ♦ Moons
- ♦ Structures
- ♦ Other Phenomena

These Discovered locations may include:

- ♦ Secret Locations
- ♦ Resources
- ♦ Events/Missions (time limited and permanent)
- ♦ Beauty spots (usually attached to other entities)
- ♦ Messages/Beacons

Players explore to build up the details on their galaxy map

When starting a new commander the player will have some details on their galaxy map

- This will allow the player to travel to any locations they have map data to, without having to explore

Players can buy map data from authorities to expand their ships computers library of maps

- New map data will allow the player to travel to new locations without needing to explore
- Map data that is bought from authorities is not to the highest level of detail and can be improved with player gathered data
- Map data includes hyperspace routes to systems and major points of interest in that system



Players can use scanning equipment and probes to detect systems and record new hyperspace routes

Scanners are used to detect any nearby systems that are within the players jump range

- Scanners will give the player a vague indication of the direction of a system
- High end scanners can give the player a better details of the system they have detected (is it a star, an asteroid field etc.)

Players can then launch hyperspace probes that will give the player more information on the part of space they are looking at

- Probes will give the player heat-map style data to help guide the player to the correct co-ordinates for a jump
- Different probe ammo can provide different information, or react based on objects in the target system

Using the data they have gathered the player must align their ship as best they can with the target system and activate the hyperdrive to jump to the system

- The player's ship records data of any successful jumps the player makes
- The pilots federation will always pay players for the first successful jump they make using the exploration method (If the player bought the map data for the jump they cannot sell the data), even if the player is not the first person ever to make the jump (the pilots federation use the data to improve their telemetry and keep maps up to date)
- If the player is the first person to ever make the journey they receive a bonus for discovering the hyperspace route
- The closer the player lines up their jump to the target system, the higher quality the data the players ship will gather on the jump. Higher quality data is worth more money when sold to authorities

If a player's jump is not accurate enough they may suffer a miss jump

- Longer distance jumps require a higher level of accuracy
- A systems contents may also affect how accurate a players jump must be to avoid mis-jumping

Players use scanners to detect points of interest within systems

The player's scanners detect various points of interest around the player

- It takes time for players scanners to detect points of interest
- Player's proximity to a point of interest can affect the time it takes to detect
- Players ship facing can affect the time it takes to detect a point of interest (e.g. pointing my ship at a undiscovered point of interest will allow me to scan it faster)

Different types of points of interest can require different player actions to detect

- For example to detect a mineral rich formation of asteroids the player must launch probes around an asteroid field
- The probes provide a cross section from their perspective of the asteroid field they're launched at
- Each additional probe the player uses provides more details on the target asteroid field
- The player uses their scanner to view the data from the probes, and must tag the areas with the highest concentration of minerals in the field
- Once this process is complete the point of interest is completed
- The quality of the players scan of the area affects the value of the data
- The quality of the player's scan can affect the amount and type of materials found in the asteroids

Players can sell information they have gathered to other players as well as authorities. This is done through a trade interface similar to



the trade goods trading interface. Players can sell hyperspace routes from their location to any single system they have explored to. The purchasing player then offers a price (this can be 0 if it is a gift), and if both players are satisfied they agree to the trade. Players can also trade in system data including locations of points of interest using the same method.

I'd like to gauge player interest in a community driven photography contest, which would be another way of explorers earning money.

Players can take photographs (essentially screenshots) from their view ports (with and without cockpit and GUI etc)

Player photographs can be submitted to a regular photography contest

- *Players can only submit one photograph each*

Players can vote on a selection of the best photographs

The player(s) who get the most votes wins the competition

- *The winner gets a (in game) cash prize (plus prizes for 2nd 3rd most weird etc.)*
- *The photograph (and other user submissions) will be used in appropriate places in the game (billboards, news papers, etc.)*

Players who decide to go exploring are jumping into the unknown, and without high end kit, often with little to no knowledge of the dangers they are jumping in to. Alongside the risk of encountering hostility when jumping to an unknown system, explorers scanners attract a lot of attention, generating lots of heat. Explorer ships will need to be prepared to face hostile activity when exploring, and players need to be ready to fight for their claims or run for their lives. ■

MINING

Detection

There are two stages to detection:

Initial find – commanders must utilise scanning systems to locate a resource areas such as an asteroid belts, comets, and dust/ gas clouds within a system

- This initial detection can involve the use of “far scanning”: micro drones or extended sensor scans
- Once areas have been located they will be visible on the commanders system map

Once a suitable area has been successfully located the commander can attempt to use further scans to determine the best candidate areas

- Commanders can skip this step and attempt to extract resources in effect “blind”
- Information from detailed scans can reveal precise resource types as well as provide feedback to improve the moment to moment harvesting
- Scans will display a ‘heat map’ of the mineral make-up of a body, showing areas especially rich in particular resources.

Minable bodies/areas can range in size from tiny to huge:

- Bodies of all sizes and masses will be spread around in a realistic gravitational manner, in a belt for example.
- In the case of gas/dust clouds it is described by the size and density of the cloud

Each resource area will be composed of different sets of elements. These elements make up the composition of the bodies found within the area

- Each body will have a different composition but it will contain many of the same elements as the rest of the resource area
- The precise makeup is actually determined by the system itself and its makeup

Extraction

Players need empty cargo canisters loaded onto their ship before they can begin extraction

The method of extraction depends upon the resource type

Mineral Bodies (Asteroids)

- Once a player has located a suitable body to mine they then equip their mining lasers and begin the mining process
- Different areas of the surface will have different areas with different densities of certain minerals.
- When the player fires at a particular area with their mining laser for the required amount of time, chunks break off and they can then be collected with a scoop
- Each unit of resource collected fills an empty cargo canister, either as pure resource or as a mixed dust

- Each unit of dust that is collected retains the elemental composition of the asteroid it was mined from

Frozen Liquid Bodies(Comets)

- These work in a similar way to other bodies, but different equipment is required for extraction
- Lower powered mining lasers are used extract chunks without melting them, these can then be collected in the same way as mineral bodies
- Players can travel behind a comet and scoop their trails

Gas/Dust Clouds

Gas/dust clouds must be flown through with an appropriate scoop

Certain areas will be more dense and give a richer yield, the player should aim to fly though these areas as much as possible

Some gas/dust clouds require specific types and grades of scoop

Some gas/dust clouds may suffer reactions based on vessel temperature and speed of travel

Incorrect management of speed and temperature can cause damage to your ship, potentially dangerous reactions as well as a decrease in the purity of resources collected

After the required amount of time travelling through a resource area, an empty cargo canister is filled

In all cases, there are other potential effects from harvesting:

- **Contamination** – this can occur during the extraction process, by collecting and storing the resource or simply by being within the vicinity
 - Specialised scanners and ship monitoring systems can alert the commander to contamination
 - Certain resources that are mined can have potentially damaging attributes, radioactivity for example
- **Void creatures** – space contains a number of base intelligence critters that can be disturbed whilst detecting and extracting resources
 - Most are hostile, a few can become valuable resources themselves
- **Drones** – commanders may equip and employ drones to collect solid resources in the same way that they can collect floating canisters (this is an alternative method of collection for vessels without an operational cargo scoop)
- **Auto miners** – potentially not for release one: these are large deployed devices that can mine a location over time, allowing the player to collect them at a later date
 - They cannot be found by other human commanders unless the commander is also present at the location, though on return commanders may find that they have suffered malfunctions or been contaminated
 - More expensive auto miners are more resilient to adverse effects and can offer greater yields



Refining

A refinery module is available to the player and when equipped it is accessed through a cockpit interface

Players put the units of unrefined asteroid dust they have collected into this interface

Units are split into their component parts

Refineries have a set of "hoppers" which fill up with the different elements produced by the process

- Once a hopper contains an element it can only continue to take that element until it is full
- Once a hopper is full it becomes a unit of refined resource
- Refined units are worth slightly less than pure units
- Waste can be combined into units of generic alloys

Both Refined and pure units of resources collected and refined whilst out mining can be sold up the players return to the station

Units refined this way can then be sold on the "Resource Market" (separate from the commodity market) at the station

Almost the entire periodic table of elements can be acquired in this manner

Claims

Some resources may be subject to an NPC claim:

Such claims are normally broadcast via beacons placed at the resource location

The beacons transmit details of the claim

- Some beacons can detect extraction and transmit alerts to the claim's owner
- Some beacons are mobile
- Sometimes this functionality is carried out by a vessel (which may or may not be a mining vessel)

Claims create additional gameplay potential by weaving events and missions into the mining process

Players mining in claimed areas can be at risk of a fine or being attacked by the owners

NPCs can be found patrolling claimed resource collection areas such as asteroid fields. ■

MINING PROCESS

We're initially looking at three types of resources that can be mined:

- ♦ Mineral bodies
- ♦ Frozen liquid bodies
- ♦ Gaseous/dust clouds

Mining is split into three distinct stages:

Detection – there are two stages to detection:

Initial find – commanders must utilise scanning systems to locate a resource point such as an asteroid field, dust or gas cloud within a system

- ♦ *This initial detection can involve the use of "far scanning": micro drones or extended sensor scans that can over time allow initial detection in neighbouring systems*

Once a find has been successfully located the commander can attempt to use further scans to determine the most efficient extraction points

- ♦ *Commanders can skip this step and attempt to extract resources in effect "blind"*
- ♦ *Commanders can obtain data elements for their galactic map at a system level which contain resource information as if they had scanned it themselves*
- ♦ *Information from detailed scans can reveal precise resource types as well as provide feedback to improve the moment to moment harvesting*

Resources can range in size from tiny to huge:

- ♦ *In the case of mineral and frozen bodies this is based on a percentage chance of each body harbouring resources*
- ♦ *In the case of gas/dust clouds it is described by the size and density of the cloud*

Some resources are visually identifiable, others are not (they could potentially be extracted without detection but it would be pot luck)

Extraction – the method of extraction depends upon the resource type but importantly, all methods of extraction require moment to moment gameplay that rewards skilful and attentive players

Mineral and frozen liquid bodies can be attacked with mining lasers which "break off" flecks of resource

- ♦ *Depending on the accuracy of these attacks (based on data acquired through scanning) the flecks will:*
- ♦ *Take longer to break off*
- ♦ *Be more or less valuable*
- ♦ *Poor accuracy can reduce the overall amount of resource obtained*
- ♦ *Different resources can require specialised mining laser types to improve yield/allow extraction*
- ♦ *Incorrect laser types can trigger potentially dangerous reactions as well as decrease yield*
- ♦ *Flecks can be collected, at which point they become canisters of the appropriate resource*



Gas/dust clouds must be flown through with an appropriate scoop

- Depending on the accuracy of the flight path the yield may be greater or less
- The cloud is dispersed over time as the commander flies through it
- Some gas/dust clouds require specific types and grades of scoop
- Some gas/dust clouds may suffer reactions based on vessel temperature and speed of travel
- Incorrect management of speed and temperature can cause potentially dangerous reactions as well as decrease yield
- For every X amount of a resource scooped an appropriate canister is created in the hold

In all cases, there are other potential effects from harvesting:

- Contamination – this can occur during the extraction process, by collecting and storing the resource or simply by being within the vicinity
- Specialised scanners and ship monitoring systems can alert the commander to contamination
- Void creatures – space contains a number of base intelligence critters that can be disturbed whilst detecting and extracting resources
- Most are hostile, a few can become valuable resources themselves

Drones – commanders may equip and employ drones to collect solid resources in the same way that they can collect floating canisters

(this is an alternative method of collection for vessels without an operational cargo scoop)

Auto miners – potentially not for release one: these are large deployed devices that can mine a location over time, allowing the player to collect them at a later date

- They cannot be found by other human commanders unless the commander is also present at the location, though on return commanders may find that they have suffered malfunctions or been contaminated
- More expensive auto miners are more resilient to adverse effects and can offer greater yields

Some resources may be subject to an NPC claim:

Such claims are normally broadcast via beacons placed at the resource location

The beacons transmit details of the claim

- Some beacons can detect extraction and transmit alerts to the claim's owner
- Some beacons are mobile
- Sometimes this functionality is carried out by a vessel (which may or may not be a mining vessel)

Claims create additional gameplay potential by weaving events and missions into the mining process. ■



SALVAGE RULES

Salvage specifically represents the ability to make money from the husks of ships and abandoned structures

A ship husk/structure can be scanned using mining sensors to identify potentially valuable assets that can be mined from it

- This mimics standard mining

Using mining equipment salvage chunks can be generated from the husk

- The mining equipment is used as if the husk/structure was an asteroid
- Each husk can only generate a finite number of resources, based on type and a hidden quality value
- Each husk can only receive a finite amount of damage from attacks or mining before it is completely destroyed, or in the case of larger structures, ruined (no more mining possible)

Salvage chunks can be scooped or collected by drones as long as the commander has the cargo space and empty cargo canisters

Salvage is generally low value, however, occasionally a salvage chunk may be special:

- Rare and valuable materials can be contained in a salvage chunk, dramatically increasing its value.

- Mission/event critical information can be contained in a salvage chunk
- Dangerous contaminants may be contained within a salvage chunk

Scanning a salvage chunk or salvage canister will reveal such additional elements

Salvaging and the law

The act of salvaging within a jurisdiction is normally (but not always) a crime, and can be witnessed and reported by NPC ships

There is a chance that a salvage chunk might contain information identifying the ship or structure it came from

- The more salvage chunks obtained from a single source, the greater the chance that one of them will contain such information

If the salvage chunk was obtained illegally (from a jurisdiction) such canisters are considered stolen goods

- A salvage chunk or salvage chunk canister must be scanned with a cargo scanner to reveal this information, otherwise it is simply described as "un-scanned salvage"

Commanders may purchase system salvaging permits whilst docked from authority factions, allowing them to legally salvage within that faction's jurisdiction in the system

- Not all docks can offer this administrative service
- Not all systems offer this service
- Permits are transitory and game-time based

Salvaging and ship death

When a ship is destroyed it may leave behind a husk

- The chance of a husk being left is decreased based on excess damage from the killing blow and technical limitations

Such a husk can be salvaged

- Ship husks may be removed from a session based on technical requirements

Salvaging and the background simulation

The chance of ship husks and structures being generated is affected by various factors:

- Levels of piracy
- Conflict
- Hazardous environments

In addition, some events can be entirely salvage based, such as the husk of a large interdictor vessel being present at a location for a length of time

Hopefully this is a refreshing return to good old game mechanics.

It's also worth noting that this system is separate from cargo, which may be ejected from ships, though not particularly when they are destroyed. This is one of the main reasons that salvaging is not particularly profitable or efficient – I don't want to make it a path of least resistance: the pirate collects cargo from their prey then boils them anyway for additional salvage loot. ■



KEY CHARACTERISTICS OF A BOUNTY HUNTER





They hunt and destroy ships to collect their bounty reward

They travel large distances to track down targets and prefers ships with a large hyperspace range to help them do so

When they attack a target they want to destroy them convincingly. They prefer taking better weaponry over heavy armour that might slow them down and limit their ability to chase targets

Bounty Hunters prefer to improve the heat management and stealth ability of their ships to allow them to pull off kills more effectively.

They benefit from having advanced scanners, this improves their ability to locate the targets they are hunting down and to locate weaknesses

They work towards the biggest and best weaponry, going for effectiveness and heat efficiency wherever possible, they finance these upgrades with bounty money

The best Bounty Hunter ships and equipment are top of the line and expensive to match, but the rewards can be large. However, we do intend to make sure their overall profit gain is balanced against other player roles.

The role/path of Bounty Hunter is not formalized by the game in any way, just like other roles. You do not need to choose a role or progress down a traditional unlock tree.

Bounty Hunter Progression

The role of Bounty Hunter should be a career path not just an activity

Players will be able to work their way from a beginner to a highly skilled

There will be a series of modules and ships available to buy to reflect this progression that allow a bounty hunters to become more effective

We can use NPCs to provide a variety of bounty targets that allow players to get started

Aspects of Being a Skilled Bounty Hunter

Getting kills without response from the law

- ♦ Ambushing targets when they are not in factional sanctuary

Getting kills without taking damage

- ♦ Making the best use of their weapons and stealth to finish a target before they can properly retaliate

Killing targets with large bounties

Planning kills in advance to take advantage of weak spots in a target

- ♦ Using stealth to scan and weigh up a target before attacking to give them the advantage

Bounty Collection

Player discovers a bounty:

- ♦ By scanning another ship with the appropriate equipment to reveal that they have a bounty
- ♦ By finding a bounty listed on the bulletin board, giving them a rough location
- ♦ Players cannot legally collect bounties without scanning their target first to confirm they are attacking a ship with a bounty

Once they have confirmed the ship they are targeting has a bounty they are free to engage

Once they have killed their target they receive a bounty chip for that kill

They can then return to a station and cash it in for the reward. ■



CRIME LIST

There are a set number of recognised crimes; they come in two severities:

Minor Crime – Punishable by fine

Unlawful Discharge – Unauthorized firing of weapons near a structure or ship controlled by the factional authority in the system

Collisions – Colliding with a ship or owned structure enough to cause damage

- *Shields soak up most collisions*
- *Damage is caused when two ships collide with a certain force*
- *A ship is exempt from this crime if docked or "dropped anchor"*
- *"dropped anchor" is a player initiated act that takes a small amount of time and protects against the exploit of quickly coming to a stop in front of a moving ship*

Stolen Goods – Being detected carrying stolen goods

Illegal Goods (Minor) – Being detected carrying goods that are classified as illegal in the current system according to the factional authority

- *Illegal goods includes passenger transporting of persons with reported crimes in the system*

Illegal dumping – Being detected jettisoning toxic cargo

- *Jettisoning any cargo within a set distance from a dock is counted as illegal dumping*

Obstructing Justice – ignoring a request from factional authority vessels and structures (such as fleeing instead of stopping to allow a scan or trespassing in restricted space)

Major Crime – Punishable by attack (via Pilot's Federation bounty/faction bounty)

Attack on a ship or structure – firing on and hitting an owned structure or locking on and firing at a ship

Murder/Ship Destruction – causing death/destruction of an owned structure

- *This includes destruction through collision*

Illegal Goods (Major) – Being detected carrying goods that are classified as highly illegal in the current system according to the factional authority

Public Enemy – Failure to pay a fine for a set number of times

Jurisdiction

With the exception of Pilot's Federation Bounties, a crime is only ever committed within a jurisdiction; in unregulated space such as dark systems and anarchies crimes are ignored

A jurisdiction always belongs to a faction



Police patrols and occasional NPC vigilantes will also be equipped with cargo scanners, and may also do spot searches.

Players may turn off their 'squawk' such that even if attacked the crime is not automatically reported.

Pilot Federation Bounties

When a member of the Pilot's Federation is attacked, they have the option of setting a Pilot's Federation Bounty on their assailant, within a preset min and max credits for this

This action is time limited – they forfeit the ability to set a bounty after a set time elapses once they have entered a different session (eg through death or hyperspace)

Should their ship be destroyed by the assailant they have a limited amount of time from when their escape pod arrives at a dock to set the bounty

♦ *Launching from a dock forfeits this ability if not already set*

The credit value of a bounty must be available in the player's account, and is immediately deducted.

A Pilot's Federation Bounty can only be claimed by any member of the Pilot's Federation

The Pilot's Federation Bounty system does not bypass local laws such as "Unlawful Discharge" that may be active so players need to bear this in mind

A Pilot's Federation Bounty is only removed if claimed by a bounty hunter or redeemed by the perpetrator

♦ *Redemption can only occur after a set significant time period has elapsed (eg 1 calendar week) and the perpetrator makes financial restitution of a significant multiplier of the bounty (eg 10x) to the Pilot's Federation*

Detection and Rap Sheet

When a crime has been witnessed and reported it is logged to the perpetrator's rap sheet, but this rap sheet is not visible to other ships by default unless they were direct witnesses – ships must scan the perpetrator and even then, they will only receive details out outstanding bounties applicable for the current jurisdiction (the scan automatically cross-references local authority reports) and active Pilot's Federation bounties

Players may have positive reputations with certain law enforcement agencies, then the scanner will be able to look up details of crimes committed in other jurisdictions

A ship will detect and inform its commander when it is being scanned

♦ *Some advanced scanners can scan without being detected*

Once a ship has been scanned, its commander's outstanding bounties for the current jurisdiction are known to the scanning commander until the two commanders are not in the same session (discounting the 'hot pursuit' effect if you follow them through hyperspace)

A commander can view their full rap sheet at any time

A rap sheet contains the precise breakdown of crimes that the commander has been detected committing

♦ *Each crime has a fine or bounty value attached to it*

The defining nature of a jurisdiction is that it contains facilities to receive information transmitted by ships

- ♦ *These facilities range from space stations and inhabited planets to automated defence stations and satellites*
- ♦ *Large vessels owned by the faction also provide this functionality, effectively generating a jurisdiction in the area they occupy*

Witnesses and Reporting

Even within a jurisdiction, crimes must be witnessed in order to count as a crime

All NPCs can act as witnesses to all crimes that don't need special equipment to detect

The chance they will report it depends on

- ♦ *Their archetype (ie a pirate is unlikely to report piracy or whether they are an archetype with local law enforcement powers)*
- ♦ *Whether they saw it clearly enough to be able to identify the ship (ie on distance) and they will have to perform an active scan to do so*
- ♦ *The reputation of the perpetrator (communicated via a simple dialogue)*

Players can purchase cargo scanners, and for players that have achieved a high enough local status these can be equipped with secure law enforcement software that can also be used to report smuggling, for which in most jurisdictions there is a reward based on the value of contraband apprehended.

Right to Retaliate

When a commander is the victim of a major crime within a jurisdiction they automatically receive the right to retaliate:

- ♦ *Their ship automatically scans the perpetrator, giving them knowledge of the outstanding bounties in the current jurisdiction*
- ♦ *They count as a witness and automatically transmit the crime to the factional authority controlling the jurisdiction*
- ♦ *They are allowed to attack the perpetrator with impunity in any jurisdiction controlled by the same factional authority as where the crime was witnessed and reported*

The right to retaliate does not grant immunity from prosecution in jurisdictions controlled by different factional authorities

Note: If the commander is attacked in a jurisdiction that does not recognize the crime, the commander does not gain the right to retaliate!

In unregulated space no crime is ever committed and any form of retaliation is acceptable

Authority Response

Once a major crime has been reported to the factional authority that controls the jurisdiction a response is dispatched to the location – and that dispatch will be rapid – usually they would arrive by hyperspace within a minute if they respond at all.

The size of the response is related to the severity of the crime, modified by the total amount of crimes logged for the location and the background simulation for the system

- ♦ *If the victim is present at a location when authority ships arrive the crime is instantly detected by the authority ships and they gain knowledge of the perpetrator's rap sheet*
- ♦ *If the victim is not present the authority ships will be required to scan the perpetrator to detect the crime and gain knowledge of the perpetrator's rap sheet*

Their behaviour will in general lean towards scanning all vessels once they arrive but may be influenced by reputations and ship appearance to the point that a scan is guaranteed or never initiated

The standard response for a major crime will be to attack directly once a faction bounty has been detected though we may have archetype variations for law enforcement where they give a warning – giving the option of a bribe or of buying off the bounty at 10x (or more) there and then.

Once a crime has been detected by a factional authority vessel/structure whilst an authority ship remains in direct contact all associated ships and structures of the faction also have knowledge of the perpetrator's rap sheet. Otherwise they have to choose to look it up as normal.

- ♦ *This knowledge persists according to rules described earlier in the Detection section*

Multiplayer – crimes against human commanders that cause a bounty to exist make the criminal able to be matched with any other human commander present in the “all players” group

This punishment lasts for a set amount of game time

Consequences

Fines

When the player is witnessed committing a crime punishable by fine, they immediately accrue the fine and have a set period of time in which to visit a representative of the appropriate faction/Pilot's Federation and pay it

Failure to pay within the time allotted increases the fine

Once a commander has failed to pay within the allotted time a set amount of times they commit the public enemy crime for the faction/Pilot's Federation

A commander always has access to his crime sheet to view fines

Faction Bounties

A faction bounty can be claimed by anyone that destroys the perpetrator whilst having knowledge of their rap sheet

Knowledge of the rap sheet can be obtained via a scan of the perpetrator or from an event or mission (which acts the same as if the perpetrator had been scanned)

The destroyed husk of a perpetrator can be scanned to obtain its ID and then look up its rap sheet – though attacking a ship without having knowledge of its rap sheet would itself be a crime, so it is safer to “scan first, shoot second”

The commander that delivered the killing blow on a perpetrator obtains a bounty data item ‘voucher’ if they have knowledge of the perpetrator’s rap sheet

- ♦ *This voucher can be traded in at a dock that contains a representative of the appropriate factional authority to claim the bounty*
- ♦ *The voucher can also be traded between players (presumably at a discount) to cover players that might be unable to cash in the voucher due to crimes of their own.*

When a commander with a rap sheet gets their ship destroyed, any faction bounties are immediately turned into fines via a conversion factor

The commander’s “failure to pay fine count” is also reset

This does not prevent a commander that destroyed the perpetrator’s ship whilst having knowledge of their rap sheet from claiming the bounty

Bounty vouchers once created will have to be cashed in within a particular time, or they will expire.

Crimes and Docking

When a commander with a rap sheet arrives at a dock via escape pod they are automatically scanned and knowledge of their rap sheet for the current jurisdiction is given to the faction that controls the dock

When a commander with a rap sheet arrives at a dock in their ship, they may be scanned:

- ♦ *The chance of being scanned is modified by reputation and ship appearance*
- ♦ *If there is ‘hot pursuit’ by the same factional authority as that owning the dock, then the dock also has knowledge of the commander.*

No action is taken against a commander for crimes on the rap sheet that occurred in jurisdictions not under the control of the factional authority that owns the dock



PILOT'S FEDERATION GUIDE: THE LAW AND YOU

Pilot, it is imperative that you are aware of your legal rights as a starship operator and Pilot's Federation member. The following transmission describes common regulations present in this sector. Take time to familiarise yourself with its contents:

1. Regions of space are governed by various organisations. It is their legal duty to transmit jurisdictional boundaries to all sectors within a system. This allows pilots to determine under which authority they act at all times. Your cockpit interface will display any current active jurisdiction.
2. Crimes committed and reported within a jurisdiction will cause a bounty to be automatically assigned to the perpetrator and they will be informed via low bandwidth transmission.
3. If a jurisdictional authority has assigned a bounty to you your cockpit interface will report your local status as WANTED. Be warned, whilst within the jurisdictional boundary, any vessel is legally allowed to engage and destroy you, but responding in kind is illegal, unless the aggressor also has a bounty in the jurisdiction.
4. If you detect a vessel that has a bounty from the current jurisdictional authority you are legally allowed to engage. REMEMBER, you must perform a basic scan to determine a target's local criminal status; you are legally allowed to engage if the target displays a WANTED local status on your cockpit interface.
5. The K-Warrant advanced scanner allows you to cross-reference a target's criminal status across a number of systems, and can detect bounties assigned by authorities outside the current jurisdiction. Any bounties detected will be combined and displayed in your ship's cockpit interface Contacts panel.
6. REMEMBER, just because a target vessel has an assigned bounty value, you are only legally allowed to engage at least part of the bounty is for crimes committed in the current jurisdiction (though upon successful target destruction bounties are always paid). To ensure a clean legal status, ALWAYS check the local status of a target before engaging.
7. We advise caution when travelling in warzones and systems with no functioning authority (anarchies). In such regions of space no law is respected; vessels can engage each other with impunity; no bounties will be issued (though bounties can still be claimed for successful target destruction).
8. Some active conflict zones may have combat bonds available from the sides involved. Simply choose a faction using the cockpit interface Functions panel; you will be temporarily co-opted and able to earn rewards for the destruction of enemy vessels in the zone.

If a commander has crimes on their rap sheet that occurred within a jurisdiction controlled by the factional authority that owns the dock the following event automatically occurs:

The commander must pay off all fines before they can leave in addition to any payments required to obtain a ship

- *The commander must use a creditor if they lack the funds to pay off the fines*

Based on chance and reputations, a commander may be able to bribe the dock authorities into "looking the other way", allowing the commander to launch without paying off fines, or even to mark them as 'cancelled'

Contacts may be able to alter, reduce or clear rap sheets

- *Such services are rare and will always entail a cost of some kind*

Commanders with sufficiently high reputations can petition for Letters of Marque from the Empire or Warrants from the Federation

Letters of Marque and Warrants authorise attack and plunder of vessels openly allied to the specific opposition faction, but only in independent space (jurisdictions not controlled by the either opposing faction)

Letters of Marque or Warrants mean that certain actions are no longer crimes for that player.

Letters of Marque and Warrants can effectively give the player law enforcement powers in that area, and corresponding greatly reduced chance of scan/search. ■

Missions/Events and Exemptions

Based on reputations, game logic and contacts, missions and events can be generated that affect a commander's rap sheet

Rap sheets can be used to generate bounty missions awarded via bulletin boards and contacts

SLAVERY AND THE EMPIRE

Generally speaking, An Imperial citizen cannot be forced into slavery; instead they sell themselves into servitude, often as a way of bettering their situation – slave owners have a burden of care for slaves, including resolving issues the person brings with them.

Slaves also have a pretty good chance of regaining their freedom, often returning to free society in a better situation than when they left it.

Finally, slavery of this nature is not looked down upon; in a society where honour is all important, selling yourself into slavery – to clear a debt for example – would be seen as a noble act.





That's not to say that it's all sweetness and roses; no one in the Empire wants to be a slave and treatment can vary tremendously from owner to owner. But for the most part, slavery acts as somewhat as a safety net in a society that in many ways is extremely uncaring for an individual's plight.

Slavery and the rest of the galaxy

Of course, slavery also exists outside the Empire, and here we're talking about something far more recognizable and ugly. Whilst it's illegal in the Federation and the Alliance, there are black markets for those that are in the know.

Independent systems vary massively in terms of what is acceptable behaviour and what is not, including slavery. So whilst it's by no means commonplace, it's perfectly possible to make a business out of.

And now, to the heart of the matter! Here are our thoughts on how slavery might crop up in gameplay terms:

Slavery legality

There are two types of slaves: slaves and Imperial slaves

Imperial slaves are always considered legal commodities in Imperial systems

Non-Imperial slaves are considered illegal commodities in Imperial systems

Both types of slaves are considered illegal commodities in Federal and Alliance systems

Both types of slaves may be considered legal or illegal commodities in independent systems, based on various system parameters (e.g. faction government type, security level, current events)

Slaves may be traded at black markets in systems where slavery is illegal

Carrying dead slaves regardless of whether a commander killed them via poor transport care or not, is considered as the crime of murder by most systems

- Some black markets will buy stasis canisters containing dead slaves as though they were fertilizer commodities
- Extreme (read: insane) faction systems and system events such as famine can cause markets to (temporarily) purchase such canisters as though they were meat commodities

Slave commodity rules

Slaves can be transported in stasis canisters

To transport a stasis canister of slaves (of either kind) the cargo hold must be fitted with powered cargo racks

- Failure to use such racks kills the slaves after a time delay

Slaves and permits

Trading in slaves affects various reputations, such as criminality

Commanders can purchase citizen permits for different factions (as data chits that can be traded)

- Using a cockpit interface a commander can apply a permit to a slave canister which converts them into a passenger
- When docked, a commander can offload such passengers to local immigration
- Some humanitarian contacts can take delivery of such passengers
- These different outcomes affect commander reputations, such as humanity
- Imperial slaves do not in general view being freed as a good thing; there is a chance (based on player reputations) that they will issue an Imperial attempted murder bounty on the commander that frees them

Passengers and slaves

Some contacts can offer a commander the ability to sell their passengers into slavery

- This has an extremely significant impact on commander reputations
- Selling important passengers/contacts into slaves is possible and will feed strongly into the mission/event creation system

Slaves and Events/Missions

Trading and dealing in the slave trade opens up lots of interesting possibilities:

- Sting operations when selling slaves to contacts
- Revenge missions from
- Imperial slave defectors
- Betraying important passengers for a third party's benefit. ■

GALAXY MAP

WE DON'T NEED THE WHOLE UNIVERSE, JUST THE MILKY WAY.

Igor Terentjev is the lead programmer on Elite: Dangerous and one of the people that were working secretly on the project, long before the idea of running a Kickstarter campaign was even suggested. As lead programmer the colossal task of procedurally generating an entire galaxy fell on his shoulders, here is his own account as to how he went about it.

When deciding how to create the galaxy, both to be fun and as realistic as we can make it there are a number of substantial challenges that need to be overcome. First and foremost of these is the simple technological issue of how to represent efficiently something the size and scope of the Milky Way.

400 billion stars - that's a large number; and they need to be generated on demand, quickly. And they need to look right. We start with a density map of the Milky Way spiral – something we try and match up to real life data as best we can, and this results in an approximate amount of mass in each sector. We then use a sector's address to seed the random star generator. Some stars are big and rare - too big and rare to be generated in a 10LY cube, so we need a hierarchy of sectors, 8 layers deep. But we got there - one Milky Way, sir, just like you imagined.

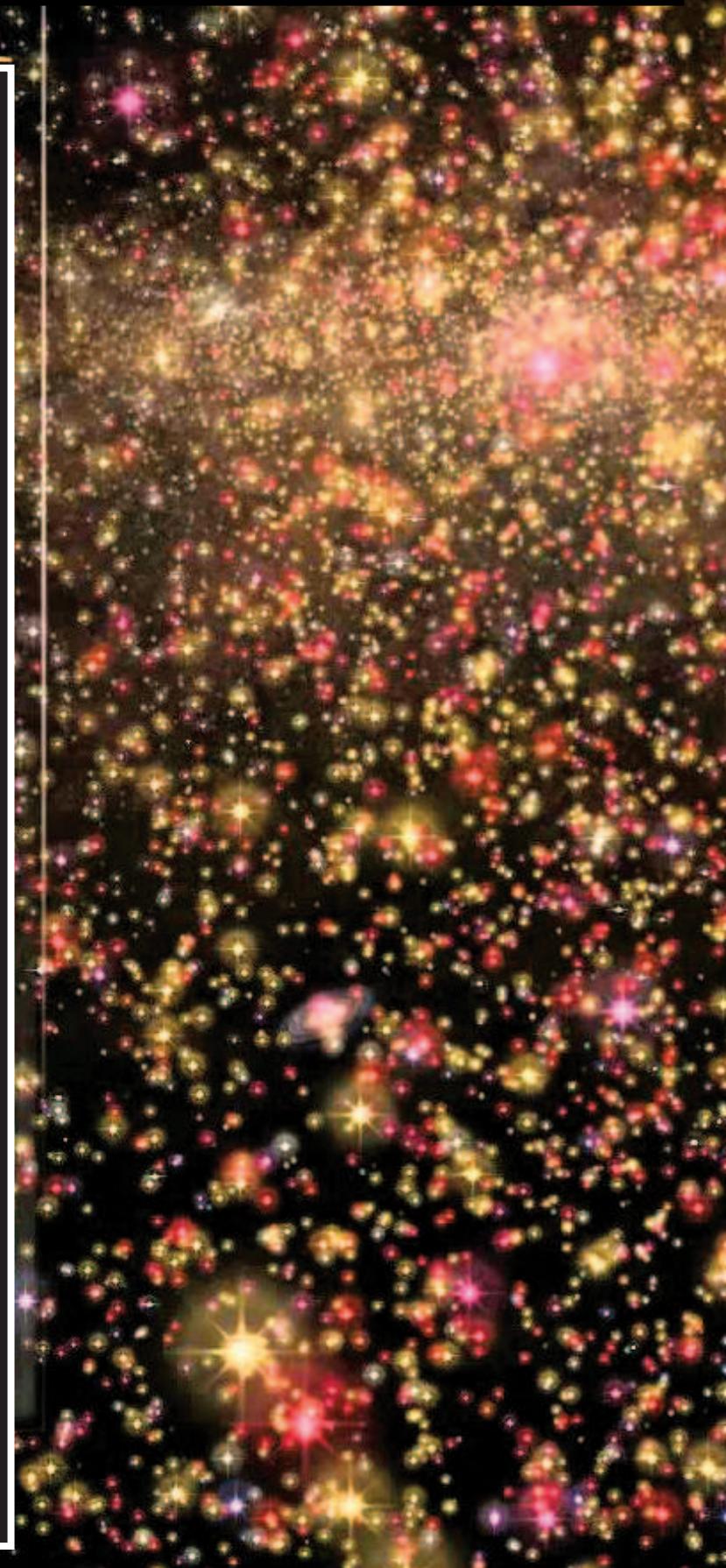
The second problem is the realism of what is generated. It is fairly simple to pluck random numbers from a seed, but these need to distribute in such a way as to make the galaxy genuinely representative of what's there in real life. Generating a properly distributed single value of nebula mass required some extensive research into modern thinking on Initial Mass Functions. This tells us the mass at which a star enters the main sequence and begins hydrogen fusion.

My task was to design a series of processes that would generate the properties of stars, which would present a realistic galaxy. There are physically understood relationships that link the original mass and composition of a star-birthing nebula, the mass of a star, its size, temperature, brightness, colour, lifetime, and what the fate of the star will be once it runs out of hydrogen in its core to fuse. It was challenging to design an efficient on-the-fly process to take a single input, an amount of nebula mass, and create values for every other parameter, but it was also enjoyable to dig through astrophysics textbooks and papers to refresh memories from University. It was satisfying to see the testing tool I created to examine the results of my random generation processes outputting scientifically sound distributions of the parameters mentioned above.

And it's not simply stars. There are many other interesting phenomena in the galaxy, all of which we want to account for. Bright nebulae left over after a super-nova event and the residual neutron star, black holes are just a few examples. This of course leads into the final challenge which is building the systems surrounding the star systems in the galaxy.

What I found interesting was the star system generation, as procedural generation has been a topic of interest to me for a while because I love the idea that I can create an algorithm and still be surprised by some of the results it produces. The most challenging part of this was researching the current theories on how the stars and planets form and then trying to translate those theories into a simple algorithm that can quickly generate realistic looking star systems.

Of equal importance to plausible looking systems was to arrange the algorithms so that they respect physical laws. A nice example of this is the Roche Limit or Radius... As a body approaches the Roche limit of its parent object (for example as a moon approaches a planet) it gradually loses its spherical shape, and suffers massive tidal heating. Once it passes inside that limit it disintegrates and instead of a planet or moon you end up with ring system(s)."



GOALS

Provide the player with understanding of their current location

Provide useful information to enable the player to make interesting decisions

Encourage the player to visit new locations

Easy to use

Be a fun toy for exploring the scope of the galaxy

To be used to 'print' the night sky skybox on arrival in a system

To provide a compelling backdrop for interstellar travel

PRESENTATION & INTERFACES

Galactic map is a standard module in all cockpits of jump-capable ships

Map is presented as a 3D hologram in the cockpit

Player can zoom differing levels of view
(From whole galaxy down to system map and individual stations)

Analogue Zoom mechanism

- Seamless from entire galaxy down to stations

Presets

- Whole galaxy
- Shows key landmark systems
- Shows key landmark celestial objects
- Zones
- Human space
- Federation space
- Imperial space
- Alliance space
- Geographic space (eg Orion spur, Hyades, Pleiades)
- Player selected area of interest
- Sectors
- 10 x 10 x 10 ly
- Shows currently selected sector
- Systems

Filters used to control what is displayed (see Filters Section)

Quick return ability to return to system player is currently in

Search facility

- Player types
- Name of objects
- Search returns list
- Selecting item on list selects that location

Favourites/Bookmark

- Player has list of selected locations
- Locations can be added and removed from list
- Selecting location on list selects that location

GALAXY VIEW

Core visualisation modes

- 3D mode
- Two camera types
- Point and click – select stars for zoom enabled orbit camera mode
- Flythrough – camera can be flown through the map
- Vertical slice mode
- Fixed orientation camera (think top down tactical style map)
- Move up and down through slices
- Only stars in the slice are displayed
- Slider control moves slice through galaxy width

Systems represented in 3D space

Highlight brings up minimal information for system

- System name
- Faction
- Potential to allow expanded details to be expanded further by hovering on them

Select system to view more information

- System name
- Faction
- Major planets
- Major stations

SYSTEM VIEW

Core visualisation Modes

- Realistic
- Correctly scaled object sizes
- Correctly scaled distances
- Correctly scaled positions
- Correctly scaled object movement
- Logarithmic Scale
- System is scaled so that objects are easily viewed
- Motions scaled to provide interest

Hover over object to bring up minimal information

- Name
- Object type

Select object to bring up detailed information

- Name
- Type
- Meta data
- Places of Interest

Selected object can be made target for in-system jump (Placeholder until in-system travel mechanisms confirmed)

FILTERS

Systems

Toggles can be used to control which systems are displayed in galaxy view, with configurable fade-offs

- All
- Bright systems
- Dark systems
- Economy type (agricultural/industrial)
- Government type (security level above pre-defined level)
- Population
- Stellar classification
- In range systems
- Missions
- Allegiance
- Has station
- Has shipyard
- Explored
- Not explored
- Contacts
- Events
- Distance

Toggles can be displayed to indicate other items too

- Landmark objects (nebula, pulsars etc...)
- Routes between systems
- Zones of allegiance
- Busy routes

AIDES

Various aids to using the map can be toggled on or off

- Galactic plane
- Absolute
- True galactic plane
- Systems shown with stalks to indicate separation from plane
- Becomes less useful when further away from plane
- Relative
- Artificial plane created based on the height of the selected system from the real galactic plane
- Systems shown with stalks to indicate separation from plane
- Sector box
- Bounding box for sectors
- Sector grid
- Distance faded sector grid
- Compass/View Gizmo
- Shows direction to galactic centre
- Allows shortcuts to specific camera views

IGATION

FILTERS

OPTIONS

EARCH

ENTER SYSTEM NAME



ROUTE

CURRENT LOCATION



ERANIN

ESTINATION

LP 98-132



INFO

EGNAIMT WI-Y A70-1

STAR TYPE: L 1 V

ALLEGIANCE: NONE

ECONOMY: UNKNOWN

GOVERNMENT: UNKNOWN

POPULATION: 0

No Description

EXIT

UNIVERSAL CARTOGRAPHICS GALAXY MAP UPGRADE: PREVIEW

CONTROLS:

The map is driven either through keyboard and mouse or using a controller, with standard UI navigation for the left hand panel where you can search and filter and modify display modes.

- ASWD or left analogue allows you to move the cursor around the horizontal plane of the galaxy
- Right mouse hold or hold X and use left analogue to move up the cursor up and down in space
- mouse wheel or triggers to zoom you in and out
- Right analogue to rotate around location or left mouse down and drag
- Y on controller or Home on key pad to return home
- Select location in range by pressing A on the controller or enter on keypad when the cursor is over its map point

The map allows you to explore the available data on the galaxy and target destinations.

The blue arrow represents your location.

Only items in the white sphere are within your current Hyperspace capabilities.

Selecting a location within your hyperspace capability will lock your navigation system on to that location.

When the cursor is over a location it provides the currently available details for that location.

Note: Due to the proprietary nature of this software system views are not available – please refer to the supplementary documentation provided





DATA

Toggles can be used to control what additional data can be displayed

- ♦ None
- ♦ Traffic
- ♦ Trading
- ♦ War zones
- ♦ Value
- ♦ Wealth
- ♦ Quantity
- ♦ Standard of Living
- ♦ Profit
- ♦ Development level
- ♦ Loss
- ♦ Security
- ♦ Trade routes
- ♦ Commander deaths
- ♦ Piracy
- ♦ Beacons
- ♦ Production
- ♦ Friends/Groups
- ♦ Bounties collected
- ♦ Current locations

UPGRADES

Map can be upgraded by purchasing new software modules

Data in map can be expanded by purchasing data packets

- ♦ System locations
- ♦ Object locations

Data in map can be upgraded via sensor data

USE CASES

Plotting a hyperspace jump

Automatic course

- ♦ Origin already selected (current system)
- ♦ Player selects destination system
- ♦ Select plot course
- ♦ Sat Nav style options for configuring route
- ♦ Quickest route
- ♦ Safest route
- ♦ If there is a viable route then this is displayed, the destination is locked into the hyperspace computer so if jump initiated this is the target

Manual course

- ♦ Origin already selected (current system)
- ♦ Player selects destination
- ♦ If within jump range and has enough fuel then add as hyperspace target
- ♦ Repeat above, but add new points to the jump chain
- ♦ Player confirms last jump and jump is locked

How do I find the system/planet/station that I have named?

- ♦ Open the search box
- ♦ Type in target name
- ♦ Select from returned list

I have a cargo of beans, where can I sell it

- ♦ Activate filter to show trading data
- ♦ Activate filter to show non-agricultural systems
- ♦ Select system with low trading traffic and attempt to plot course

I am a bounty hunter and looking for new targets

- ♦ Activate piracy filter
- ♦ Activate security level filter
- ♦ Systems with high piracy and low security should be good hunting grounds

I am an explorer and want to find somewhere new

- ♦ Activate not explored filter
- ♦ Select system within range not explored. ■



BACKGROUND

POLITICS

- ♦ Create a dynamic, evolving galaxy
- ♦ Generate interesting events
- ♦ These can then be used to create missions
- ♦ Respond to player activities
- ♦ Player activities should have greater impact
- ♦ Respond to injected events
- ♦ Respond to generated events (chain effect)

ECONOMY

- ♦ Create a dynamic economy
- ♦ Populate markets (quantities and prices)
- ♦ Be relatively predictable (to aid player understanding)
- ♦ Generate interesting events
- ♦ These events can be used to create missions
- ♦ Respond to player activities
- ♦ Player activities should have greater impact
- ♦ Respond to injected events
- ♦ Respond to generated effects (chain effects)

The requirements for both the political and economic simulations are similar, potentially similar enough that they can be driven by the same system, which is something we will explore with this design.

The simulation also provides data for NPC traffic generation, modified by local conditions.

From a technical perspective the following goals are also required:

- ♦ Low overhead for processing
- ♦ Low overhead for data storage
- ♦ Low data access requirements

WHAT THE SIMULATION IS NOT

It does not provide faction command; this will be done by designers by injecting events.

Although the system should provide aggregated data to help guide these events.

It does not provide a fine detailed simulation of human space in the galaxy.

Note that it does provide the framework for a living galaxy as required in the goals.



SIMULATION

WHAT DEFINES A SIMULATION ENTITY

A simulation entity is the lowest unit to which the simulation applies, this will typically mean a system or a world within a system. Note that an entity can support multiple markets.

A system can include multiple entities

New entities can be added or destroyed at any time via events.

All of the simulation needs to be instrumented, so that we can track such events and override them if appropriate.

An entity has a number of variables. Each of those variables defines what events the simulation creates.

GOVERNMENT TYPE

The government type is one of a list of predetermined types. The types apply a range of modifiers to the base values for system. For example communism, or democracy.

Government types provide inherent modifiers for issues like corruption and distribution of wealth..

The list of government types is listed below:

- *None (There is not a significant population to require governance)*
- *Anarchy*
- *Corporate State*
- *Religious Cult*
- *Independent Democracy*
- *Federal Democracy (ie Federal State)*
- *Theocratic Dictatorship*
- *Autocratic Dictatorship*
- *Communist Dictatorship*
- *Feudal*
- *Imperial Colony*
- *Imperial Protectorate*

STATE

The entity's state applies special modifiers, depending on the state. Changes in state are created via events – usually injected events.

An entity's state will sometimes modify events and associated missions that are generated.

This needs to be data-driven and the list below is non-exhaustive

We may want the extreme category to be only triggered by human moderation

A list of states and their effects are shown below (the magnitude of the effects can be varied on a case by case basis):

- *Peace – this is the default state, there are no modifiers.*
- *Economy (Positive) – there has been an upsurge in the economy*
- *Has a positive effect on Standard of Living, Production and Wealth*
- *Economy (Negative) – there is a downturn in the economy*
- *Has a negative effect on Production, Standard of Living and Wealth*
- *Unrest – this state indicates internal conflict with no other named entity involvement*
- *Has a negative effect on Standard of Living, Security and Wealth*
- *Civil war – this state indicates internal civil war without an external named entity (note that civil war with named entities is simply a war)*
- *Has a negative effect on Standard of Living, Security and Wealth*
- *Development level is frozen while in civil war.*
- *Threat of War – Entities prepare for a possible conflict with other entities*
- *Markets require weapons and medical items even if not normally stocked*
- *War – the entity is at war with another entity*
- *Has a negative effect on Standard of Living, Security and Wealth*
- *Markets require weapons and medical items even if not normally stocked*
- *War (Losing) – Entity is losing a war against another entity*
- *Has a negative effect on Standard of Living, Security, Population, Development Level and Wealth*
- *Markets require weapons and medical items even if not normally stocked*
- *War (Winning) – The entity is winning a war against another entity*
- *Has a negative effect on Security and Wealth*
- *Markets require weapons and medical items even if not normally stocked*
- *Famine – The entity is not able to support its own population through normal means – typically only affects agricultural worlds, although other worlds that are not importing enough food can slip into this state*
- *All food production is removed*
- *Market requirements for food increased*
- *Has a negative effect on Standard of Living, Wealth and Population*
- *Drought – The entity is not able to support its own population through normal means – typically only affects desert worlds, although other worlds that are not importing enough food can slip into this state.*

- All water production is removed
- Market requirements for water increased
- Has a negative effect on Standard of Living, Wealth and Population
- Outbreak (Minor) – A minor pandemic has broken out in the entity's environment.
- Markets cannot export food or medical items (except machinery if applicable)
- Has a negative influence on Standard of Living and Wealth.
- Outbreak (Major) – major and lethal pandemic breaks out in the entity's location.
- Markets cannot export food or medical items (except machinery if applicable)
- Markets demand for medical items increased
- Has a negative influence on Standard of Living, Population and Wealth.
- Development level is frozen
- Entity will be quarantined
- Outbreak (Apocalyptic) – extremely lethal and contagious disease widespread in entity's location.
- Markets cannot export anything
- Markets demand for medical items increased
- Has a negative influence on Standard of Living, Population, Development Level and Wealth.
- Development level is frozen
- Weather (Severe) – Severe weather (includes earthquakes, stellar flare events and other natural disasters)
- Has a negative influence on Standard of Living and Wealth.
- Elections – The entity is in the process of elections.
- Special events – these are determined on a case by case basis, for example space weather)

ECONOMY TYPE

The economy type is a broad indication of the primary income generation for the system. This usually reflects what the main exports are. They also determine what items are generally available in the markets.

- Agricultural
- Industrial (Civilian)
- Industrial (Military)
- Government
- Mineral
- Service
- Tourist
- Criminal

POPULATION

The population size of a planet is used to measure the effects of changes or player activities. It is also used to modify the availability of items in associated markets.

Population size can be affected by events.

DEVELOPMENT LEVEL

This a broad indicator for how advanced the colony is. It provides modifiers for the various variables of the entity. In a broad sense it is an indicator of how well the entity can absorb change, shortfalls and so forth. It also represents the entities ability to support itself through contact via other entities.

STANDARD OF LIVING (SOL)

The standard of living variable indicates how good life is for the average member of the entity's population. A high standard of living requires adequate essentials (such as food) as well as luxury items.

This will also affect the availability (and demand) for such items in the markets.

A low SOL indicates a poor standard of living for the population, in situations with low stocks of essentials like food this indicates an event like a famine.

Manipulation of the markets either directly through trade or indirectly by blockade will change the SOL appropriately.

SECURITY

The security value represents the security situation for the entity. The higher the value, the more secure the population feels and vice versa.

The security value can be modified by direct player action, acts of piracy will lower the security while bounty hunting will increase it.

WEALTH

The wealth variable indicates the accumulated wealth of the entity. The entity can use its wealth to generate events to boost its other values and as such acts as a cushion for negative changes. It also indicates the strength of the economy and feeds into prices.

Note the while SOL and wealth are connected, they are not the same thing.

Players can influence wealth in a number of ways, generous trading will increase wealth, while reducing profit margins for the locals will reduce wealth. Destroying entity assets will impact on wealth, and influencing security and SOL will also have a knock on effect.

BI-MODAL SIMULATION TICK

The simulation runs in two distinct modes (although the evaluation of each mode generates the same events). The first is based on player activities, once an activity type reaches a threshold for the entity, the impact is applied and any events generated

As well as player effects we also want periodic change driven by the simulation itself.

PLAYER ACTIVITY THRESHOLDS

Player activities within the associated volume for the entity are tallied into various influences. These influences have a direct effect on the entity's stats. The tracked activities are as follows:

Development level

Negative impact

- Failed development missions

Positive impact

- Completed development missions

Standard of Living

Negative impact

- Failed standard of living missions

Positive impact

- Completed standard of living missions
- Completed trades that add to the entity's essential goods

Security

Negative impact

- ♦ Piracy
- ♦ Murder
- ♦ Failed security missions

Positive impact

- ♦ Bounties collected
- ♦ Completed security missions

Wealth

Negative impact

- ♦ Issuing missions
- ♦ Losses made on trade by entity

Positive impact

- ♦ Profits made by entity

Thresholds for the activities are set depending on the entity's population, development level and modifiers from government types as applicable. A count for each activity is maintained; note that it is the net between positive and negative actions that is used to determine any change. Missions are weighted more heavily in the count than general actions. Once the net effect reaches the threshold value then an event is generated. The activity counts are reset and the threshold value recalculated based on the new statistics if needed.

Note that wealth is not a triggered threshold, but is included as it does change depending on circumstances and is required for generating remedial missions.

GENERATED EVENTS

When a threshold has been triggered then the entity creates an event, this is typically a mission designed to address the problem, although this will cost the entity some of its wealth. If the entity has no wealth then an event cannot be created, however a message will be generated for the monitoring developers (see intervention triggers).

Periodic change can also create events.

The government type determines whether an event should be generated for the triggered threshold.

If the government type allows it then an event (and associated mission) is generated. These will follow the same pattern as the activity thresholds list, so for example a bounty hunter mission will be generated if the security variable is reduced.

PERIODIC CHANGE

The periodic development of entities is handled by a periodic scan of each entity. The entity's variables are analysed and adjustments made. If any changes change a value across a given minimum then an event is created in the same way as if an activity threshold was crossed.

Currently the frequency will be set at a daily (real time) tick. However this may require altering once in place.

FACTION SUPPORT

For entities that belong to a faction (the Alliance, Federation and Empire) there is a safety net provided by those factions. When an entity attempts to generate an event and lacks the wealth to do so it uses its faction's lookup table to generate a faction event for the event type.

For example an Imperial system has been plagued with pirates; it has issued missions which no player has completed. This cycle continues, with more player pirates pushing the entity into a downward spiral. Eventually it is no longer able to generate missions and so receives a faction support event. This is an Imperial task force of a cruiser with several squadrons of fighters. These suppress the pirates and order is restored.

GOVERNMENT COLLAPSE

When an entity attempts to issue an event and cannot (and it doesn't have faction support) then the entity's government collapses and is set to none. To guard against exploitation and unwanted background simulation states, human moderators are alerted to significant system changes and can manually change states as necessary.

INJECTED EVENTS AND INTERVENTION

Events that affect entities can be injected into the game that can directly change an entity's statistics. This mechanism can be used to add specific events to the game, like civil wars, economic collapse and major story items.

Intervention messages are a failsafe in the system. When an entity's stats reach set levels (a minimum and a maximum) a message is sent to whoever is monitoring the galaxy highlighting possible collapse or expansion opportunities. They can then be used to manually add events as desired.

MARKETS AND TRADING

Each entity can have one or more markets. A market is defined as a place where the player trades with NPC's. Typically this will be at space stations, ship yards, pirate and smuggler bases. The entity defines what commodities are available and their prices, although the markets will also modify these.

As with the political events, economic events occur in a bi-modal tick. The periodic method is a check of the entity's markets and any adjustments made. The other method is the threshold system of players trades that works in a similar fashion to the player activity thresholds

Events can change what entity owns a particular market. They can also destroy and create markets.

CALCULATING BASE PRICES

Base prices are initially calculated as a function of economy type, government type, development level and population.

For example a largely populated agricultural world with a high development level would have cheaper food prices than an equivalent industrial world.

Prices have a universal minimum and maximum price cap to prevent catastrophic price failures and exploits.

RARE GOODS

Entities which have a sufficiently high development level may start creating rare goods based on their primary economic output (with oversight by moderator action), e.g. an agri-world could generate a rare foodstuff.

Rare goods can be anything that the market produces, so this can include ships and ship modules.

PERIODIC MARKET ANALYSIS

On a periodic basis (daily) the market for each entity is analysed and updated depending upon the analysis. This analysis is performed before the political simulation so that any economic changes are taken into account.

The major components of that analysis are as follows:

Restock markets

The markets for the entity are restocked according to the type of market, the commodities that the entity produces (these are also affected by the development level, government, entity state and economy types).

There are caps to the maximum capacity for each commodity determined by the market type. Larger stations can hold more goods for sale. These caps also limit player sales, so if a market is already full of food, no more food can be sold to that market.

Note that the restock quantities are representative (scaled by population size and development level). We do not have an agricultural world producing a million tons of food per day.

Calculate wealth adjustment

The current trade for the system is calculated and the net effect is applied to the entity's wealth.

Standard of Living (SOL)

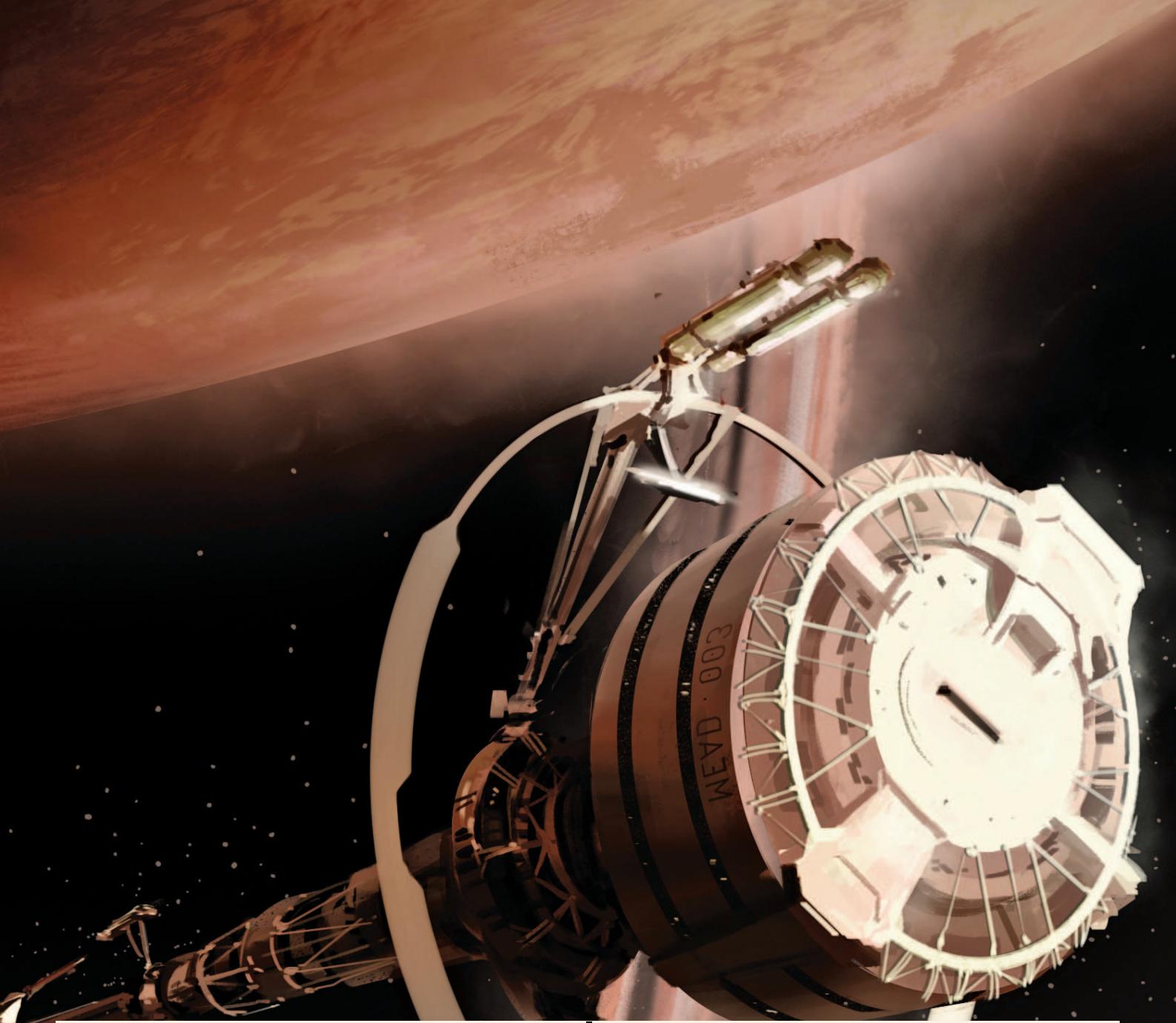
The entities standard of living is processed, quantities of essential goods are removed from the markets. The removed quantities are representative values scaled by population and development level, we are not modelling planetary scale use of commodities.

Commodities are grouped for essentials and luxuries. If there is a shortfall then the SOL is reduced appropriately. Surpluses of essentials will increase SOL, but only to a maximum of 50%. Shortfalls of luxury items reduce SOL, but to a minimum of 50%. Surpluses of luxury items increase the SOL, but only if the SOL is at 50% or higher.

Recalculate prices

For the remaining quantities of each commodity a new price is calculated, based on a ratio determined by a lookup table from the price at the beginning of the analysis process. For example if the commodity now has a stock level of 50% higher, the price per unit will drop by 25%.

Prices are also changed according to any variance for component commodities. For example if a market sells food and the price of fertilizer increases then so will the unit price of food.



Reset trace counters

The accumulated counters for the trade thresholds are all reset.

Reset thresholds

The thresholds for each commodity are reset depending on the updated stock levels.

MARKET THRESHOLDS

In the same way the political events are triggered by player activity thresholds, price and stock changes are triggered by player trades.

For stock availability this correlation is direct to the trade, so purchasing 100 units reduces the stock level by 100 units and vice versa.

Prices are not quite as volatile as stock levels, they require accumulated trades to trigger price changes.

For each commodity the entity creates a threshold level for price increases and drops. The threshold is determined using the entity's

economy type, government type and development level. The unit quantity for each trade is applied to the relevant counter for each commodity, when the counter reaches the threshold for a change the change is triggered.

INFLATION

The economy is not a balanced system of checks and balances, but a system of causes being used to generate effects. As such there is a danger of inflation (where players accumulate so much money that it is effectively devalued).

This issue can only be completely eradicated if money is destroyed in the same quantity that is being created. As the game is focused on positive effects (from the player's perspective), with only some negative effects, this is not an achievable goal.

To combat inflation there needs to be suitable money sinks that the player spends money on reducing the cash in the player economy.

It should be noted that players getting richer is not the same as inflation and is desirable. However we should ensure that at all times there are interesting spend choices. ■



ELITE DANGEROUS – FACTION CAUSES AND THE BACKGROUND SIM

GLOSSARY OF TERMS

System – A collection of stars, planets or other astral bodies under a single collective name, e.g. “Lave”, and requiring a hyperspace jump to reach.

Faction – An organisation that adheres to a single set of laws and that has a relationship with other factions. Factions can control single systems (such as independent systems) or multiple systems (such as the Federation)

System Authority – All inhabited systems are controlled by a faction in the form of a system authority. System Authorities can adopt statuses and causes.

System Statistics – Statistics and data about a system authority.

System Statuses – Broad stroke conditions that effect a system, e.g. war, poverty, economic boom

System Causes – Sets of missions and events with a theme relating to a specific Status.

Tick – A variable amount of time that determines when background simulation data is collated, and system statistics are updated.

System Assets – These are the various objects, resources, and points of interest in a system.

WHO RUNS A SYSTEM?

Every inhabited system has a system authority, representing the physical presence of the dominant faction in the system (or representing lack of governance in case where no faction is in control). The system authority has a number of system statistics:

Wealth – a rating of the system authority's capital

- Between 1 – 1000. 1 represents low average wealth, 1000 represents a high average wealth

Standard of Living – a rating of the wellbeing for the population under the care of the system authority

- Between 1 – 1000. 1 represents a low standard of living in squalid conditions, 1000 represent utopian living standards

Development level – a rating of how technologically and materially advanced the system authority is

- Between 1 – 1000. 1 represents very low development and facilities, 1000 represents the highest development and facilities

Security – a rating of the system authority's military capability

- Between 1 – 1000. 1 represents low security, with the faction owning few combat capable ships, 1000 represents a highly secure system with a large faction fleet

Population – a representation of the number of inhabitants under the care of the system authority

- Between 1 – 1000. 1 represents severe under-population, 1000 represents severe overcrowding

Government Type – a description of the method of governance used by the system authority
(some factions specify a government type)

- None (*the system is unpopulated*)
- Anarchy
- Commune
- Communism
- Corporate State
- Religious Cult
- Democracy (*Independent, Federal, Alliance*)
- Theocracy
- Dictatorship
- Feudal
- Imperial Colony
- Imperial Protectorate (*part of the Imperial interstellar faction*)

Major Economy Type – the most prevalent type of market controlled by the system authority

- Agri
- Industrial
- Criminal
- Extraction
- Military
- Services

System Authority Owned Assets – a list of points of interest under the control of the system authority

Non-System Authority owned Assets – a list of points of interest not under the control of the system authority

Neighbouring Authorities – a list of nearby system authorities close enough to be deemed “neighbours” and able to affect the system

Each entry logs the factional relationship between the two system authorities

- These system statistics can change based on player activity and statuses (described later). Importantly, they are collated and interrogated every meta-game tick to determine how the system evolves.
- The faction behind a system authority determines the laws of the system, as well as determining diplomatic status with other factions. Such diplomatic status affects all systems controlled by a faction.
- The system authority and its associated stats determine the welfare of the system and what things happen in it.

WHAT HAPPENS IN A SYSTEM?

Each tick, by interrogating system statistics, system authorities are assigned any number of statuses and a single cause.

STATUSES

Statuses give the player general information about the system authorities' current system stats in the form of a broad, system-wide condition.

Different combinations of stats will lead to different statuses being awarded to a System Authority. For example, in order to receive the ‘Famine’ status, the following conditions must be met:

- Populations Stat must be 9 or more
- Standard of Living Stat must be under 3
- Agricultural Assets must be fewer than residential assets

System authorities can be awarded any number of statuses, as long as their system statistics meet the requisite requirements when the tick occurs. A status can have discrete positive and negative effects:

Adds one or more causes to the potential list from which a single cause is chosen each tick

Determines a list of statuses that cannot be selected whilst it is in effect

Generates stories added to the news feed

CAUSES

Causes add themed missions and events into the mission/event creator.

Causes dictate what the majority of events and missions are that will be available in the system for that tick. They represent a theme associated to a status. For example, the “famine” status might have two associated causes: “exodus” where people are generally attempting to leave the system, and “food drive”, where people are making extra concerted efforts to obtain food supplies.

Each tick a cause is chosen at random, with statuses adding weight to their related causes.

Missions generated by a cause are in addition to other missions generated by the mission/event generator.

RESOLVING STATUSES

As players perform actions in the system, and react to the available missions and events, their actions will be recorded and logged.

When the tick ends all the aggregated data for all player's actions in that system are collated, and the system authority's system statistics are updated accordingly.

These updated system statistics are compared against exit thresholds values for active statuses. Each status may have a number of exit thresholds values that could result in different outgoing effects. If the system statistics match a particular set of exit threshold values, the status is removed and any outgoing effects are triggered.

OUTGOING EFFECTS

Status outgoing effects can have a positive or negative effect on a systems stats and assets.

When a status is removed it may trigger outgoing effects:

- Automatic activation of a particular new status
- Alteration to system statistics
- Creation, destruction or alteration of a system asset
- Alteration to system statistics numerical values
- Changes to government type
- Changes to factional relationships. ■

NEWS FEEDS AND STATUSES



Statuses and causes will determine the contents of a systems news feed.

When a status is awarded to a faction, a story pertaining to that status is added to news feed for the system.

The Stories headline gives a brief description of the details of the status, with the story itself adding information on locations involved, what kind of events and missions to expect, specific details of the status and give clues to what player actions can affect that status.

When a status is resolved at the end of a tick a story should also be added to the news feed, giving players information on what the resolution of the status was as a headline, and details of the effect of the resolution and any changes to the faction's stats and statuses in the article.

The Faction's Selected Cause should be the main story for that tick, with news stories updated every tick.

EXAMPLE NEWS STORY

Status: Aware of Mineral Resources. Cause: Secure Mineral Resources

Federal Democracy of Sol Plans to Acquire Gold Resources

A recent discovery in the Sol system (add 'By <Player Name>' if player was involved in discovery) has urged the Federal government to move to secure the Gold rich asteroid field at <Asset Location> for official government use. If successful they will put an end to the unofficial mining operations that have been taking advantage of the mining opportunities, and secure the resources for the Federation.

In a statement, <NPC Government Spokesman> said, "We will be sending security forces to the area to ensure the area is safe while our construction crews begin work on creating mining facilities in the area. We'd like to ask any pilots in the area to co-operate with federal forces in their efforts to secure the area, and report any illegal mining operations to security forces."



Several prominent pilots have spoken out against the Federations claim, saying that the resources should be free for private organisations to mine. Some extremists have threatened to attack federation forces in order to hinder the construction of mining facilities. Others are taking the opportunity to mine as much of the precious resource as they can before the federal clampdown takes place. With mining equipment readily available from a number of ship yards around earth, the Federal government must be expecting something of a gold rush.

EXAMPLE STATUS

Status: Economic Boom

A large amount of wealth distributed among a relatively smaller population leads to economic booms. Expect events and missions

relating to trading, with players offered special prices and opportunities to acquire rare goods and services cheaply.

Required Stats: Wealth >700

Population: <800

Associated Causes: Construct new Trading Post, Buy <Trade Good>, build trading ships, build navy ships, subsidise trade

Resolution 1: The bubble bursts

Required Stats: Wealth <800

Population >800

Effects: -250 to wealth, -100 to population

Resolution 2: The Boom Continues

Required Stats: Wealth >800

Population >900

Effects: +100 to wealth, +100 to population, Economic Boom status injected to next tick

Economic boom increases a systems wealth and population. Players can help to prolong the economic boom, and will get missions and events that allow them to purchase things cheaply or sell for a high profit margin while it is active. When the bubble eventually bursts the systems wealth is greatly lowered, and the status is removed.

Notes and Issues

So, it's a complex system, apologies if it's a bit confusing. It should mean that systems are constantly changing and evolving. As statuses are acquired and resolved they should alter systems stats and create a narrative for systems as they change over time.

Players should be able to perform actions in systems and have significant changes in a system. Players should be able to look at the statuses a system has and, with a little player knowledge, perform actions that promote the result they want.

We need a good selection of statuses that System Authorities can get, with end conditions and associated causes. If you guys can suggest any ideas you have on those lines that would be a great help. If you have a good idea of what the stats would be associated with your example then all the better, but if not post it anyway, we can figure them out later.

This attachment is a flow diagram of how stats, statuses, causes and player actions are processed.

GOALS

Provide the player with useful and relevant information about the game world

Present that information in a varied and interesting fashion

Immerse the player in the game world

Be extensible to allow for extra content/features as the game develops.

BASIC SYSTEM

Newsfeeds in Elite: Dangerous display the latest in-game events to the player

The newsfeeds system revolves around two core elements:

Events

Events are things that happen in the game world.

These can come from:

- Direct player action
- Galaxy Simulation
- The Event Injection System

Channels

Channels are the presentation layer for the event.

Channels determine what news items are displayed and how the news item is reported.

EVENTS

Events are the data for the newsfeeds

Events are scored based on the relevance to the player

Events affecting them or people on their friends list, or relating to a nearby location, will be scored more highly

The player is able to adjust the threshold at which events are shown per category (probably as 'low', 'medium' and 'high').

Events are organised into types, a summary of types is provided below:

Player Driven

- Mission completion – this would be filtered by some value so only significant missions are reported
- Major kills – destroying a highly ranked opponent (human or NPC) would be a newsworthy event
- Player death – the death of highly ranked players would be a news item



- Career events – for example collecting bounties, major trades or exploring a new system
- Ranking – major ranking increases, prioritising players known to our player
- Opening/discovery of a new dark system enabling a new trade route

Player Indirect

- Traffic – unusually high or low numbers of visitors
- Piracy – piracy and anti-piracy stats for region
- Economy – Prices up/down, surpluses and shortages
- Stability – function of crime and clean up rates
- Political – changes to laws in a system (can be as a result of a civil war etc)

Injected

- Background Simulation
- Major events- these may have their own templates
- Famine
- Civil war (What's so civil about war anyway?)
- Stability
- Major military movements or interdiction of a system
- New space station or city construction

ELITE TIMELINE

1984

"Elite" was written by David Braben and Ian Bell starting in 1982 while the authors were still at Cambridge University. It was first published by Acornsoft on the BBC Micro in September 1984 to huge critical acclaim.

"Elite" set many firsts, and was the first genuine 3D game on home computers. Even many years after its release it is fondly remembered. For example "Probably the best computer game ever" (The Times, December 1988). It went on to sell around 1,000,000 units, and is popular still.

1993

"Frontier: Elite II", which the company is named after, was the long awaited sequel to Elite.

"Frontier" also set a number of firsts. It was the first game to have real-sized planets, where cities could be viewed from orbit; it was the first to use curved surfaces (Bezier), the only game to do a palette-fit every frame to get best use of colours (Amiga and ST only), and (apart from First Encounters) is the only piece of software (games or otherwise) that attempts to simulate our entire galaxy.

1995

"First Encounters" was the sequel to Frontier. It was released in Easter 1995 and was well reviewed, despite being released before the development team thought it was ready.

The detailed modelling of the geography of the planets was groundbreaking, using procedural texturing to generate the vegetation, snow, etc. on the planet surfaces. Mountain ranges, cliffs and wonderful alien landscapes and atmospheric effects all contributed to the mood of the game.

2012

"Elite: Dangerous" Kickstarter campaign was announced in November 2012 and was successfully funded in January 2013 with backers raising over £1.7 million to date.

"This is the game I have wanted Frontier to make for a very long time. The next game in the Elite series - an amazing space epic with stunning visuals, incredible gameplay and breath-taking scope, and also fully multi-player." - David Braben (Frontier founder and CEO)

Be part of the legend and join the ranks of the Elite

CHANNELS

The channel decides what news items are available from the events list and how they are presented.

The channels allow us to create newsfeeds specific to player's interests as well as more general news. Here are some example channels.

- *Imperial Times* – The flagship Imperial newsfeed, it features high profile stories focused on the Empire.
- *FNN (Federation News Network)* – One of many Federation news channels.
- *The Daily Hunter* – Bounty hunter related news.

Each inhabited system will have a procedurally generated local news channel for reporting only local events.

- Certain channels may be tagged so that they are only available in certain systems

To be considered is the possibility of including some mark-up in the templates to allow branding and visual distinction between the different channels, but this may be considered for future updates.

ACCESSING THE NEWS FEEDS

Newsfeeds are accessed from the player's cockpit. There is the direct interface part of the tertiary screens as well as hooks via the galaxy maps for accessing news feeds for different systems.

EXAMPLE NEWS ITEM

Here are two different example stories using the same event but different templates:

DAILY LAVE: Pirate Menace Struck a Blow

Today a blow was struck against pirate forces when police engaged and killed the known pirate RedBeard. In a statement the local Trader's representative said "This is wonderful news. Traders throughout the system will all rest easy knowing RedBeard won't be out there waiting for them on their next run."

THE DAILY HUNTER: Lave bounty update – RedBeard taken down!

Another pirate bit the dust in Lave today when the infamous RedBeard was taken down in a furious battle. Although the bounty was relatively small the traders of Lave will be feeling safer today.

Players will have control of detail – to show stories just in headline form, or in more detail (by expanding them), to show them in full as above.

ADVERTS

Adverts are content added to channels to provide colour and variety. They should also add some humour as seen in the previous games. They also add authenticity and depth by expanding the fiction in the universe.

These come in two forms:

- *Authored* - Adverts that have been authored (we can get the fans involved in this as well as write them internally, and possibly include real ones adjusted for the fiction).
- *Procedural* - These are template adverts that are used to generate ads for local commodities. For example Lavian Brandy, these are generated from the same system to create local specialities, along with a variety of templates to reduce repetition. ■



SIDEWINDER 'CLASSIC NAVY EDITION' OWNER'S MANUAL

NAV COMPASS

The Sidewinder Classic Navy Edition interface is designed to work for you.

- ♦ The Nav Compass allows rapid alignment with selected targets in multiple modes.
- ♦ When the target dash in the Nav Compass is faint, the target is behind you, when the target dash is bold, in front.
- ♦ Targeted stellar bodies (stars, planets etc.) are indicated by the Nav Compass.
- ♦ Nearby Starports are indicated by the Nav Compass.
- ♦ When docking, the Nav Compass indicates your allotted pad when inside the starport.

LANDING GEAR AND CARGO SCOOP

Sidewinder Classic Navy Edition is fitted with articulated landing gear and cargo scoop as standard.

- ♦ Toggle landing gear and cargo scoop using Functions Tab selections.
ATTENTION! Super cruise/Hyperspace jumps require hardpoint/gear/scoop to be in the retracted position.
- ♦ Do not attempt to dock with landing gear retracted/ cargo scoop deployed.
- ♦ When cargo scoop is deployed and a valid cargo canister is selected, target schematic is replaced with scoop helper interface.
- ♦ To scoop, position vessel so that target cargo is centred in the scoop helper interface.



- ♦ Fly towards cargo, ensuring that it remains centred.
 - ♦ Reduce speed until movement lines in the scoop helper interface are blue.
- ATTENTION!** Failure to correctly align or reduce speed may damage vessel/cargo.

FRAMESHIFT DRIVE – HYPERSPACE JUMP

Sidewinder Classic Navy Edition is fitted with hyperspace jump capable Frameshift Drive as standard.

- ♦ Highlight and select destination system in the Galaxy Map or the Locations Tab.
- ♦ Highlight and select Lock & Engage Hyperdrive on selected system to initiate jump, or use HYPERSPACE JUMP control.

ATTENTION! Jump is unavailable when mass-locked by stellar bodies – increase distance to remove mass-lock.

ATTENTION! Jump is unavailable when hardpoints/landing gear/cargo scoop are deployed.

- ♦ Frameshift Drive will charge.
 - ♦ Once Frameshift Drive is charged, align with destination target and throttle up to initiate jump.
- ATTENTION!** Navigation Compass update to show locked destination.
- ♦ Upon arrival at new system ship will slow to super cruise.

FRAMESHIFT DRIVE – SUPER CRUISE

Super cruising with Sidewinder Classic Navy Edition is smooth and responsive.

- ♦ Use ENABLE SUPERCRUISE control to charge Frameshift Drive.

ATTENTION! Super cruise is unavailable when mass-locked by stellar bodies – increase distance to remove mass-lock.

ATTENTION! Super cruise is unavailable when hardpoints/landing gear/cargo scoop is deployed.

ATTENTION! Frameshift Drive charge time will increase if ship is mass-locked by larger vessels.

- ♦ Once Frameshift Drive is charged throttle up to engage super cruise.
- ♦ Use Flight controls and throttle to manoeuvre at super cruise.

- ♦ Maximum super cruise speed is determined by proximity to stellar bodies.

ATTENTION! Maximum super cruise speed only prevents acceleration and will not prevent excessive speed on approach to stellar bodies.

Use ENABLE SUPERCRUISE control to disengage super cruise.

FRAMESHIFT DRIVE – TARGETED DISENGAGE

Sidewinder Classic Navy Edition's Frameshift Drive allows precise super cruise disengage. Arrive exactly where you need to be.

- ♦ Highlight and select destination location in the Locations Tab.
 - ♦ Highlight and select Lock & Engage Supercruise to initiate Jump, or use ENABLE SUPERCRUISE control.
 - ♦ Whilst in super cruise, locked destination will display as HUD element, showing name and distance.
- ATTENTION!** Navigation Compass update to show locked destination.
- ♦ Target Panel will show destination name and current/target distance and speed for successful targeted disengage.
 - ♦ When both target distance/speed are met, SAFE DISENGAGE READY message will display.
 - ♦ Use ENABLE SUPERCRUISE control to perform targeted disengage and arrive at precise location.

FRAMESHIFT DRIVE – INFO AND WARNINGS

Sidewinder Classic Navy Edition's Frameshift Drive features

- ♦ For convenience, orbits and stellar bodies are represented by HUD elements.
- ♦ When approaching stellar bodies, minimum super cruise safe distance is represented by a ring around the body

ATTENTION! Direct vessel outside of safe ring to avoid breaching minimum safe distance.

ATTENTION! Breaching minimum safe distance will trigger automatic emergency drop.

- ♦ When approaching stellar bodies, NAV/PROX warnings indicate collision threat.
- ♦ Use ENABLE SUPERCRUISE twice in succession to trigger emergency drop when super cruising above minimum speed.
- ♦ Interdiction by third party may cause emergency drop. ■

Overview

Thank you for choosing Sidewinder Classic Navy Edition, an unprecedented level of fighting capability paired with vintage styling and quality construction.

Fulcon deLacey welcomes you to the next level of excellence in spaceflight superiority.

Hold **UI FOCUS** and use **Left/Right** to view side panels

Use **SELECT** to activate highlight cursor on side panel

Use **Left/RightUp/Down** to manipulate highlight cursor on side panel

Tap **UI FOCUS** to return to main view



 **WARNING!** Please read this operations manual before attempting spaceflight. Incorrect operation of Sidewinder Classic Navy Edition may result in damage to the vessel/death.

Flight Control

Sidewinder Classic Navy Edition is capable of combat speed six axis manoeuvring.

Use **PITCH, ROLL, YAW, VERTICAL THRUST** and **LATERAL THRUST AXES** to manoeuvre vessel

Pitch



Roll

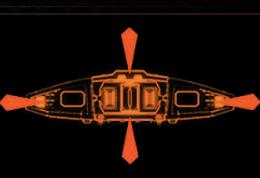


Use **THROTTLE AXIS** to set desired speed. Drives will accelerate and decelerate to match desired speed

Yaw



Vertical\lateral Thrusters



Optimum manoeuvre capability is achieved at 50% of current maximum speed

Use **ENGINE BOOST** to engage emergency thrust

Use **TOGGLE FLIGHT ASSIST** to enable/disable automatic fight



ATTENTION! IF FLIGHT ASSIST is disabled, no automatic counterthrust is available, **THRITTLE** is set to apply momentary thrust

Shield System

Sidewinder Classic Navy Edition comes with a high grade shield generator fitted as standard.

When absorbing incoming attacks, shield regeneration will temporarily cease; this is normal behaviour, regeneration will resume after a short delay once attacks have ended



 ATTENTION! To prevent feedback damage to the shield generator, shield emission will cease if emission integrity is reduced to zero percent; shield emission will resume once integrity is restored to 50%



 ATTENTION! To prevent feedback damage to the shield generator, shield emission will cease in the event of ship overheating; shield emission will resume once normal ship operating temperature has been restored



WARNING! In the eventuality of shield emission cessation, please take precautions to avoid permanent damage to ship structure and systems

Power Distribution

Sidewinder Classic Navy Edition has integrated power distributor functions.

- ❖ Use **DIVERT POWER TO WEAPONS** to increase WEAPON CAPACITOR charge rate
- ❖ ATTENTION! Energy-based weapons may not be able to activate if WEAPON CAPACITOR charge is too low
- ❖ Use **DIVERT POWER TO SYSTEMS** to increase SYSTEMS CAPACITOR charge rate
- ❖ ATTENTION! Shields and utility systems may not be able to activate/replenish if SYSTEM CAPACITOR charge is too low
- ❖ Use **DIVERT POWER TO ENGINES** to increase top end speed and charge EMERGENCY THRUST CAPACITOR
- ❖ ATTENTION! Emergency thrust may not be able to activate if EMERGENCY THRUST CAPACITOR charge is too low
- ❖ Use **BALANCE POWER DISTRIBUTION** to restore power distribution to factory default ratios



Fire Control

Sidewinder Classic Navy Edition incorporates deployable hard points and integrated twin fire control.

- ❖ Use **DEPLOY HARD POINTS** to deploy/retract selected fire group hard points
- ❖ Use **PRIMARY FIRE** and **SECONDARY FIRE** to activate selected fire group systems
- ❖ To customise fire groups, cycle **PRIMARY/SECONDARY/OFF** switch for modules in the FIRE GROUP system menu
- ❖ Use **CYCLE NEXT FIRE GROUP** to cycle through available fire groups



❖ ATTENTION! In order to maintain combat efficiency, Faulcon deLacy does not recommend simultaneously deploying different targeting systems

Sensors

Sidewinder Classic Navy Edition's sensor system is capable of resolving contacts and performing subsystem scans as standard*.

- ❖ Flickering SIGNATURE indicates potential pattern match, manoeuvre closer to resolve contact
- ❖ Use **SELECT TARGET AHEAD** function to **LOCK CONTACT** and calibrate ballistics assist computer
- ❖ Face **LOCKED CONTACT** to initiate subsystem scan
- ❖ ATTENTION! Facing away from contact during subsystem scan may cause failure to complete



❖ WARNING! * Faulcon deLacy does not guarantee subsystem scan capabilities initiated against protected systems

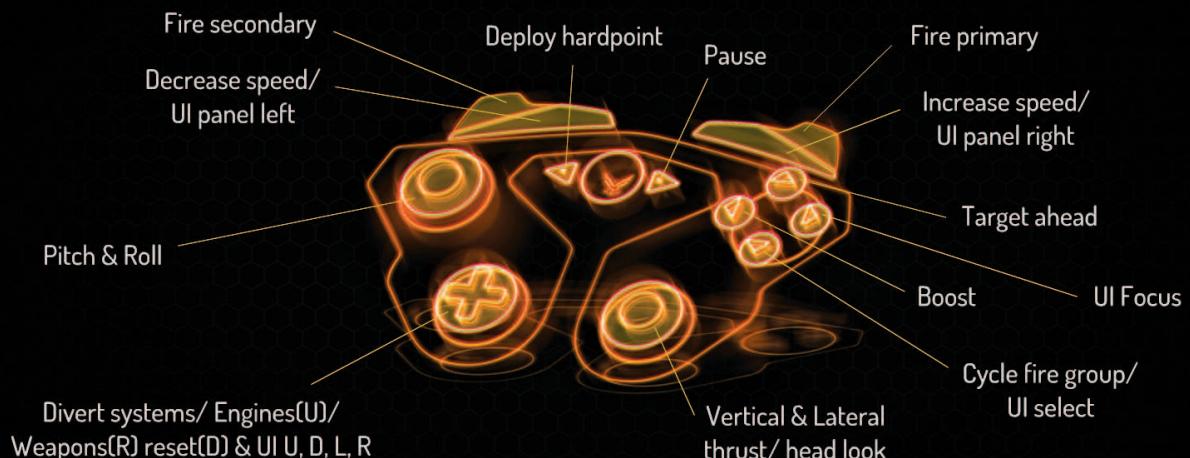
Module Management

Sidewinder Classic Navy Edition features advanced module management functions.

- You can power up/down individual modules from the **MODULES** system menu
- Powered up modules increase power plant DRAW and HEAT
- Highlight and use **SELECT** to turn on/off
- ATTENTION!** excessive HEAT will increase your vessel's **SIGNATURE**, increasing your visibility to enemy sensors.
- In the event of power loss, modules are automatically shutdown based on **PRIORITY**; use **LEFT/RIGHT** on a selected module to Increase/decrease PRIORITY

MODULES		FIRE GROUPS		
NAME	TYPE	POWER	PRIORITY	HEALTH
DRIVES	ENG	██████	▲ 1 ▼	100%
SHIELD GEN	SYS	██████	▲ 1 ▼	100%
BURST LASER	WEP	██████	▲ 1 ▼	100%
L-SUPPORT	SYS	██████	▲ 1 ▼	100%
SMALL MISSILES	WEP	██████	▲ 1 ▼	100%
PWR DIST	SYS	██████	▲ 1 ▼	100%
SENSOR SUITE	SYS	██████	▲ 1 ▼	100%
HEAT SINK	WEP	██████	▲ 1 ▼	100%
TOTAL POWER USAGE		██████	100%	TOTAL HEAT GENERATED
		██████		41%

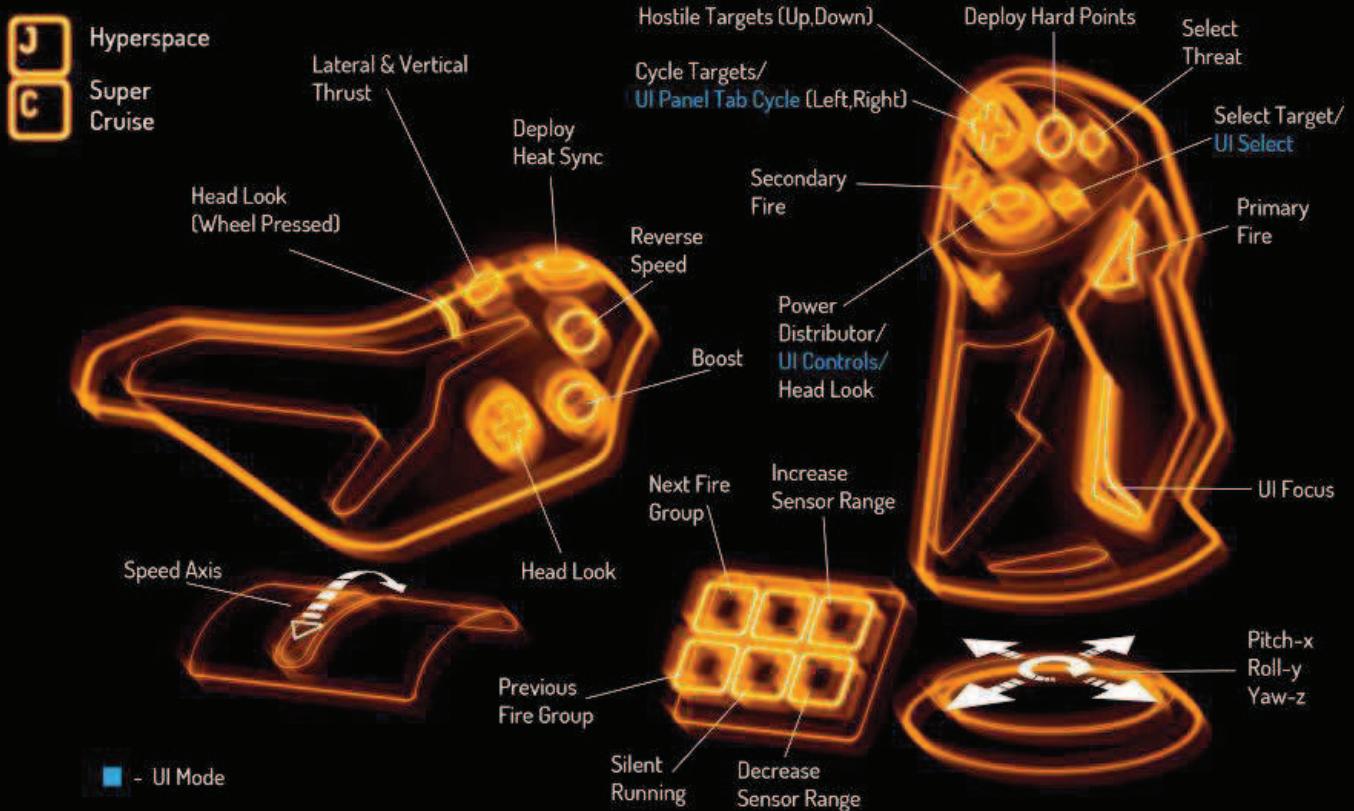
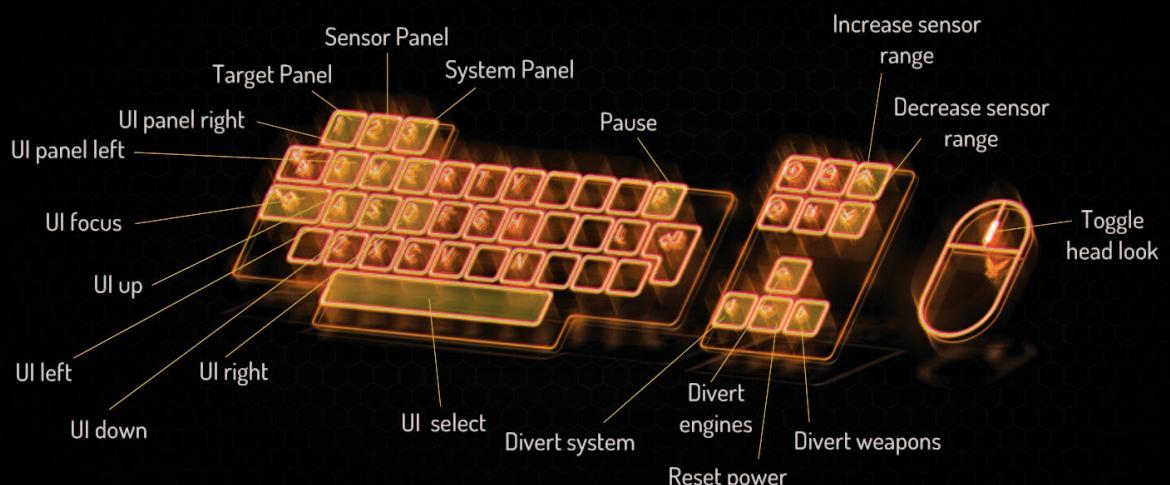
Pad Controls



Keyboard Flying Control



Keyboard Management Control



Notes:

- Players can customise their key-mapping settings using the options menu and selecting 'controls'
- A number of control presets are available for various controller types
- When using the side panels, your ship will continue to travel on the course and at the speed selected. Warning systems will alert you if you are on a collision course or about to make contact with an obstacle
- Different ships and configurations can have stronger or weaker shields than those installed on the Sidewinder Classic Navy Edition
- The Sidewinder Classic Navy Edition supports up to 8 custom fire groups
- Special equipment can facilitate scanning ships for more detail. Using special scanning equipment requires the pilot to target a ship, equip the scanner, assign a fire group and continuously activate the scanner while facing the target for a period of time.
- Disabling systems on your ship will reduce ship functionality. Systems can also be damaged and disabled by taking damage
- When fitted with an Auto-Field Maintenance Module, highlight and use SELECT to cycle ON/OFF/REPAIR



MOSTLY HARMLESS ANSWERS

This section is from Elite: Dangerous Newsletters (issue #25 included).

Cathy: Are there any secret societies, chivalric orders or the like planned for the Elite universe?

"Yes, secretive, certainly (which includes the Pilot's Federation), and some only known to their members. There will be all sorts of illegal activities – even trading in illegal goods will require you to know someone who you can deal with, who is prepared to trust you – accessed through the mission structure."

Slawkenbergius: What will the political map of the galaxy look like?

"Most (ie more than 99%) of the galaxy is unexplored at the start of the game. That is not to say that there is no politics there... Human politics is dominated by the three main powers. The Federation, based in the Solar system, The Empire, based in the Achenar system, and The Alliance, based in the Alioth system. In addition there are numerous independent worlds, and many powerful corporations, which are far more powerful than any single independent world, and a few might even challenge the big powers."

Andrew Sayers: The Outer Space Treaty declares space to be part of the common heritage of mankind. How did that treaty break down? Did the Americans decide the flag on the moon was a land claim after all? Did kids run off with it and cause an interplanetary incident?

"The treaty didn't so much break down; it was simply ignored. As industry moved into space and started manufacturing there, people started living there, people started misbehaving up there, and pretty quickly jurisdictions began to be established. Initially using extensions of the laws of the sea for ships or planes in international waters/air space (where the jurisdiction that applies is the jurisdiction of the registered flag of a ship/plane), but pretty soon people started laying claim to asteroids, and then claims to land on planets and moons, or more particularly to their mineral rights, as ever more sophisticated automated mining techniques emerged."

bedroc: Hi, If you explore far out, will there still be stations and an ability to trade?

There will be some isolated stations and bases for trading, repair and re-supply. These will be more infrequent the further you travel, although there will be some surprises for you to discover. Special equipment and supplies can be purchased to allow ships to travel further without support, but we also expect players to co-operate so that they can reach even further.

One of the key features for the evolving galaxy is that new stations (or suitable ships) can be deployed to extend humanity's reach even further into the galaxy.

Duncan147: How will you manage and prioritise the scope of this work to ensure that you maximise the value delivered at the initial release?

There are a number of core features that defines the game as Elite (these are defined by David and the development team), the alpha test process we are currently undertaking takes each of the core features (like combat, trading, docking and travel to name a few) in isolation to ensure that each of these features achieves what we want from them. Features that are not deemed core will either be included in the beta, or in the case of significant new additions (like spaceship boarding and planetary landings) will be tackled in expansions after the game's initial release.

Lestat: Will there be technology that you can purchase that can slowly repair damage to your ship automatically?

Some self repair systems will be available, although they will be quite specialised so will require investment from the player. The same technology can also be used to reduce wear and tear on your ship's systems. Serious damage will still need to be repaired in a traditional shipyard.

Rollo: Is the Sirius Corporation a significant player in Elite: Dangerous?

Yes, the Sirius Corporation (and it's plethora of divisions) are the biggest corporation in human existence, as well as owning several systems outright they are also the dominating player in fuel and power technology, their products can be found throughout human space.

Moriarte: Star Citizen is using cry engine, while Elite is using an unique engine of its own. What advantages and disadvantages do you have, when using a homemade engine, while making the space simulator?

As a developer we've used our own game engine throughout the company's history so we have considerable experience in our own technology. For Elite: Dangerous the game presents a number of challenges that we have to solve. The first (and most obvious) is the scale of the game, putting aside the requirements of procedural generation for a moment the spatial size of the game's locations are an immense (pun intended!) problem. It's quite common in space games to fudge the scale to make things look good and work, however this results in spatial locations being condensed. In Elite everything is the scale it should be, so the planets are the correct size and distances between objects are also correct. Using the Cobra engine means that we can tailor our solutions to fit the game rather than the other way round.

Luniticisi: Is Elite: Dangerous a sequel to Elite, or a sequel to Frontier, or a mix of both?

Elite: Dangerous is a game in its own right. In terms of the game history it follows on from Frontier and First Encounters, with Elite before that, but it has been such a long gap since the previous games

(Frontier was released over 20 years ago) that the breadth of what we can do now is breathtaking. The term 'Elite 4' was used for a while internally, but we are not fans of numeric sequels, especially given the elapsed time and the fact that what we have feels all new.

Slawkenbergius: Will planets and stars be to actual scale?

Yes, celestial bodies and the distances between them will be correctly scaled, wherever possible real astronomical data is being used. To give you an idea we're currently at 116,000 stars from various catalogues and includes pulsars and black holes as well as main sequence stars. Exo-planets are the other big import which we're about to start working on!

Scot: Will the old design of the PYTHON be in the game?

The Python will be in the game.

Le-Betz: Will there be ships without hyperspace capability in the game?

Yes, some ships are too small to have hyperdrives (such as the small fighters and some shuttles).

Perrie67: How will E:D make travelling the insane distances for exploring the galaxy without making it too easy to travel around the populated systems?

There are two modes of super luminal (faster than light) travel. Super cruise (or frame shifting) is used for travel inside systems. It was originally conceived as a sub-luminal drive, but based on the fantastic collaboration we have been having with our Design Decision Forum backers it was re-worked and is now itself a super luminal system to allow relatively rapid travel within systems.

Hyperspace drives are used to travel between star systems. Hyperdrives with different ranges, charge up times and fuel consumption parameters are available, and so your particular model of hyperdrive governs your specific ability to move around the galaxy. Both will make their debut in Alpha 4 (not counting the early version of hyperspace in Alpha 3).

bedroc: Hi, If you explore far out, will there still be stations and an ability to trade?

Most of humanity inhabits a few hundred light year bubble around Sol, Achenar and Alioth. Beyond this are a lower density of isolated systems with small communities on them that can be used by explorers to resupply, with small/basic orbital stations. These are the "Frontier" systems. Beyond this, you will still encounter occasional ships (including other players), but no stations; not to start with at least. There will be ship-ship docking though too, so it will still be possible to resupply. The ships suited for long range exploration will require a greater degree of self-sustainability, for example fuel scoops and repair and maintenance equipment, and we expect players to cooperate to meet the challenge!

Wreckage: Is the Kepler data for planets being figured into the galaxy map?

We're striving to make the Elite: Dangerous Milky Way as accurate as possible. As part of this we are using a variety of sources for the celestial bodies data, and that includes confirmed exoplanets from the Kepler data and many other sources.

JohnStabler: Are we going to see the return of the Imperial Trader and Courier?

The Imperial Courier is planned for initial release, the Imperial Trader isn't, although may make a later expansion.

bsivko: I would like to ask a question about support of reality in E:D Universe. As you mentioned, you will include into release all of possible data of real Universe. But what will be after release? For example, if humanity discover thousand planets more, or find new objects like wandering planets between stars. Do you plan to change the E:D Universe according to that kind of events or not?

Yes, we will be changing the galaxy to keep up to date with the latest discoveries and observations - it's one of the benefits of the connected world we now live in that we can update the game as needed! But hopefully, we won't need to update things *too* often; we think the physics we have used to predict new exo-planets is pretty good - it'll be fascinating to see how close we are!

Slawkenbergius: Will Elite: Dangerous use a physically-based shading/rendering system?

Short answer: yes it does.

Elite: Dangerous adopted a physically-based rendering (PBR) model right from the start - we want it to look as good as possible under a variety of lighting conditions (and space certainly gives you that!). We expect the visual quality of Elite: Dangerous will continue to improve as we progress through development.

It's worth mentioning though that PBR isn't a one-size-fits-all solution as much as it's the start of a discussion that could probably occupy someone for their entire career - kind of like the way "High Dynamic Range" was quickly adopted by everyone years ago but people are still arguing over the fine details!

SzaryWilk: How many commodities will be in Elite Dangerous ??

We're still refining the design, at the moment we're testing with around 100 different core commodities, with other specialised ones based off them. Such specialist or 'rares' are a separate type of tradable item ('Lavian Brandy' for example). We've seen the recent plea for tea and it looks like we might be adding that to the list.

Brodie: Apart from freight and possibly ammo will ship components such as rare weapons or engines drop or be salvageable from destroyed NPC ships?

Currently the design is that you can salvage raw materials and data from derelict ships. An idea we're considering is that enhancement technology from specific weapons and modules can provide temporary augmentations for your equipment.

Jant: How much freedom will there be to customise our ships from a purely aesthetic standpoint (like different cockpits, paint jobs, etc)?

The intention is to support as wide a range of customisation as possible, we're still working out some of the details but support for skins and decals is certain, ways to customise your cockpit are also something we're interested in. This can be expanded further when we expand the game to allow walking around ships and stations, not only with the ship but the player's avatar as well. In other words - yes, leather upholstery is on the cards!

FS3DPete: Will explorers be able to receive recognition and a finder's fee for discovering new bodies, such as planets?

Exploration is a form of data trading, discovering new systems and celestial bodies generates data that can then be traded for credits. Significant finds could also be reported in the newsfeeds and will also help guide the expansion of human space.

Patrick_68000: When we fly over planets, what minimum altitude will be allowed?

We will allow fuel skimming on gas giants and make sure that starports can be placed in suitable orbits. Throughout beta there will be an ongoing process to optimise and improve our already cool looking planets at ever closer distances.

Le-Betz: Will there be Generation Ships?

It would be fun to have them, certainly!

Kerrash: What is the smallest detail of the procedural content that is being considered? and will we be able to customize it or will it be engine controlled?

Dust particles are probably as small as it goes – or perhaps details on procedural textures. Alpha backers will already have flown over ring systems at super-luminal speeds and then looked down and seen the billions of individual rocks hurtling by below, perhaps heading down in to them.

Listeri69: What benefits can we expect to see from becoming an explorer?

The excitement of discovering something unusual – and perhaps even staking a claim (though this has to be registered). Finding a metal-rich system that is untouched for example would be a great find – and lucrative too.

Philip Coutts: Why did you pick the Sidewinder for the basic starting ship?

It is to give us more headroom in the ship progression. The Sidewinder is much smaller than say, the Cobra. For much the same reason the Eagle was the default starting ship in Frontier: Elite 2.

insanephoton: Seeing as there should be some amazing visuals, will there be any in game screen grab /screen shot manager?

The game already supports screen capture, just press the F10 and it's saved to your local hard drive. It's unlikely that we'll provide a game-specific screenshot manager, there are already plenty of image library apps available for this purpose.

Cathy: Will there be hidden societies such as secret orders to encounter in Elite: Dangerous?

Yes, there'll be a range of characters representing a number of organisations ranging from the major power blocs, to crime syndicates and organisations with hidden agendas. Part of the appeal of the Elite: Dangerous galaxy is the breadth of human interaction that you can become involved in. The primary vehicle for this interaction will be the missions, and of course it's something we will build on as we further expand the game, notably when you're able to get out of the cockpit.

tluamiani: Will guilds/clans be supported and how?

Everyone is enrolled as a member of the Pilot's Federation, and within that there will be 'groups' functionality that allows people to form organic associations. There are also the three major power blocs of Federation, Empire and Alliance of Independents that you can cosy up to (or act against) as you wish. Specifically created clans are something we will investigate after the first release of the game.

Davidtq: Will we be able to customise the appearance of ship interiors and exteriors?

Yes! We plan to offer extensive customization options - please 'watch this space' for details as we release them; you'll hear it here first.

COMPUTER REQUIREMENTS

Elite: Dangerous will be available on both Windows PC and three months later on Apple Macintosh computers.

The Alpha build is available only on Windows. You will be able to download the released game on Windows and/or Macintosh computers once it is available, at no extra charge.

Development of the game is ongoing, and so recommended specifications are currently only available for the Alpha builds.

MINIMUM RECOMMENDED HARDWARE SPECIFICATION:

Direct X 11

Quad Core CPU (4 x 2Ghz is a reasonable minimum)

2 GB System RAM (more is always better)

DX 10 hardware GPU with 1GB video ram

Internet connection

Supported Operating Systems:

Windows 7.x

Windows 8.x

For the final game the minimum hardware specifications may be lower as further code optimisations are completed.

Arn: Will it be possible to upgrade modules such as the engine, shield and power plant?

Absolutely – in Premium Beta ships and weapons are upgradable; as we progress you will get increasing choice of which system components to use, each having different strengths and weaknesses and suitability for a particular role. You will be able to switch systems such that you can ‘downgrade’ your ship if you want to, too – whether to free up some cash, or outfit your ship for a particular job.



Serge: Can you talk about the expectations of the Mac version?

We have said that the Mac version will follow around 3 months after the PC version. Currently we have been focusing on building the fundamentals of Elite: Dangerous on PC. Now we have got to Premium Beta we have enough of the game present that it makes sense for us to start focusing on Mac specific porting and optimization tasks using our cross-platform Cobra game engine software. We have been laying the groundwork for the Mac version in the background for a while now, and have just started to ramp up the activity. We'll keep you posted as we have progress to share! ■



ELITE: DANGEROUS

Be the first to get your hands on the full game!

Pre-order Elite: Dangerous to have a download of the game available as soon as its released!

Elite: Dangerous will be available once the Standard Beta phase is completed.

£35.00 BUY NOW



ELITE: DANGEROUS – STANDARD BETA

Be part of the Elite: Dangerous development team!

Pre-order the Elite: Dangerous Standard Beta now to get access to the final beta stage of game development and help us polish and perfect Elite: Dangerous!

The Standard Beta will be available once the Premium Beta phase is completed. Beta is where the whole game will come together, and by taking part you will have the opportunity for you to play, test and feedback to us.

Each of the Alpha and Beta products gives automatic access to the following development stages, and of course a download copy of the released game!

£50.00 BUY NOW

IMPORTANT: The Standard Beta does not include any downloadable content. These can be purchased separately as they become available, or you can buy the Elite: Dangerous - Expansion Pass to get automatic access to all major expansions. With all the above tiers additional downloadable content is not included. If you would like the addition content you might like to consider the expansion pass.



ELITE: DANGEROUS – EXPANSION PASS

Get your hands all major downloadable expansion packs for Elite: Dangerous!

We intend to continue expanding the game with both new content and new features such as planetary landings and ship boarding. The Expansion Pass includes automatic access to all major Elite: Dangerous expansion packs.

Available for both PC and Mac, although release dates for expansions may vary between platforms.

IMPORTANT: Requires the Elite: Dangerous game. The Expansion Pass is not a standalone product. (Both the Elite: Dangerous Alpha and Premium Beta products include an expansion pass.)

£35.00 BUY NOW



ELITE: DANGEROUS – PREMIUM BETA

Be part of the Elite: Dangerous development team! Pre-order the Elite: Dangerous Premium Beta now to get early access to the first beta stage of game and help us shape Elite: Dangerous!

The Premium Beta will be available once the Alpha phase is completed. Beta is where the whole game will come together, and by taking part you will have the opportunity for you to play, test and feedback to us.

Each of the Alpha and Beta products gives automatic access to the following development stages, and of course a download copy of the released game! Expansion Pass giving you automatic access to all major downloadable expansion packs.

£100.00 BUY NOW