



C2

[Command & Control]

AUTHOR: Mad_Cheese

TYPE: MOD / ADDON

REQUIRES: Arma 3 + CBA_A3

COMPAT: SP/MP

SIGNED: Yes

VERSION: 2.0

DESCRIPTION:

„C2 - Command And Control“ is a powerful tool that provides easy access to an arsenal of AI-commands for a player led squad.

Arma 3 handles individual AI movement very well, but forces the player to micromanage as soon as plans require coordination. C2 tackles this issue and is especially useful to plan complex routes or achieve MOUT style fireteam movements.

C2 works with both infantry and vehicles and presents the addition to Arma3's movement controls that you need for an authentic experience. The idea is to give your AI access to your very own thought process.

This addon is inspired by the games „Ghost Recon“, „Full Spectrum Warrior“, „Rainbow Six“ and „Door Kickers“.

I wrote this manual to the best of my abilities. If anything is unclear, please do not hesitate to contact me on the BIS forums.

<https://forums.bistudio.com/topic/177967-c2-command-and-control-form-asm/>

KEYBINDINGS:



As of Version 1.2, keybinds are managed by CBA-keybinds instead of the User-Action_Keys. The old controls using the „User Action Keys“ is no longer in use.

DEFAULT CBA CONTROLS:

C2_SHIFT:	L-Shift
C2_ALT:	L-Alt
SHOW INTERFACE:	L-Shift + Tab
LOCK 3D FORMATION:	L
SUPPRESSION HOTKEY:	T
GTI GENADE (PLAYER):	H (if units are selected, remote grenade func is used)
OPEN MENU:	TAB
EXIT C2-ZEUS-Remote:	L-Shift + Y
PLAYER GTI GRENADE:	H
QUICK FORMATION MENU:	Ctrl+F

Please note that C2_SHIFT and C2_ALT are ONLY relevant when in HUD-MODE.

M O D E S :

1. HUD MODE:



Hud mode can be accessed directly from your 1st or 3rd person view. You are able to assume the exact positions with the help of visible indicators, before sending your units to those positions. This is especially useful when applied to multiple units, as the default A3 controls are likely to make AI behave irresponsably when applied to multiple units. Adapt to your environment by shaping 6 formations to your desired outcome (description of controls below).

HUD mode enables you to move your units to the perfect spot AND take the formation of your choosing. It is also possible to control the unit's stances (white indicator means „Auto“ stance). 6 formations, quick access and full flexibility will get you to your desired result.

If the Enhanced Movement addon by Bad benson is running, an additional formation becomes available that you can use to make AI climb obstacles.

As of Version 1.4.1, unit selection in HUD mode is also handled by CBA:

SELECT ALL UNITS:	4
SELECT TEAM RED - WHITE:	5 - 9
SELECT UNIT 02:	CTRL + F2
SELECT UNIT 03:	CTRL + F3
[...]	
SELECT UNIT 11:	CTRL + SHIFT + F1
SELECT UNIT 12:	CTRL + SHIFT + F2
[...] until unit 20.	
GIVE ORDER:	SPACEBAR <u>or</u> CTRL + RMB

Indicator Controls:

Rotate:

Change Spacing:

Change Formation:

Change Stance:

Move, regular:

Move, Forward Peel:

Move, Aussie Peel (very basic):

MouseWheel

Ctrl + MouseWheel

Shift + MouseWheel

Alt + MouseWheel

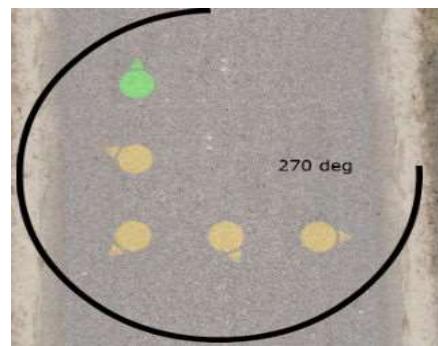
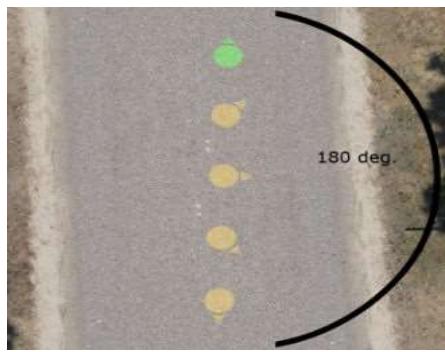
Ctrl + RMB

Ctrl + Shift + RMB (can be overridden)

Ctrl + Alt + RMB (can be overridden)

As of version 1.4, the indicator objects have a small arrow that indicates the direction your respective unit will be facing.

In most cases, HUD mode formations will spread out the looking-directions of each unit. Line formations are spread over a 180 degree angle, L-formations over a 270degree angle. The sectors for staggered columns are currently not worked out yet.



HUD mode is extremely responsive to it's environment. Your selection indicators will snap to any object you point at, then try to align itself with it in a way that makes sense to you. The alignment system is currently shared by all objects, adjustments will be made in the future to filter out the best options. Tip: Rather than focusing on the indicators, put your attention on the middle of your screen (crosshair position) to anticipate the indicators behavior.



If you do not want the formation direction to change while hovering over the obstacle, hold down C2-ALT to maintain the current direction (not advised at the moment as it clashes with AUSSIE-PEEL keybind).

When dragged upon an enterable building*, the visible indicators will snap to the available building positions. You can target different floors or the roof by pointing your weapon higher or lower at the building.



Please note that if you want to distribute your units around the building outside (as in image bottom last page), you can do so by pointing at the lower part of a wall (up to 1m above ground). It is important to note that not all building modes have building positions and path-lods defined - those are required for AI to access them in Arma. If you can only distribute units outside, the building has no such configurations.

If the indicator formation is larger than your screen, you can lock the indicator's positions (default L-key) while maintaining control over spacing, rotation and formation style - this helps with placing wide spread, yet precise formations. Please note that in the current version, this feature is not 100% compatible with object snapped indicators.

Quick Access:

You can use your numpad buttons to get quick access to variants of the Line- and L-Formations. If no unit is selected beforehand, all units will be selected. You can also use the F16-F19 keys to quickly select color teams red/green/blue/yellow.

This feature is subject to change and since it may interfere with keybinds, it can be toggled on and off in the center of the Radial-Menu (see: CONTROLS).

*Enterable Buildings:

This functionality only applies if the building model has the proper building positions and path-lods defined in its config. If you can not access the inside of a building, it means these configs have not been made. Note that buildings with and without configs may look very similar.

2. PLANNING MODE:



Planning mode adds a comprehensive overlay to the map that can be used to plan and execute very complex routes. Think of it as a „High Command“ that works on your squad level. Use the buttons to select a unit, hold down shift to add or remove units to or from the selection. Waypoints are connected by blue lines on the interface and the main map. To toggle off the main-map lines and markers, set difficulty to „Veteran“ or „Elite“.

Planning mode includes three control pages:

Page 1: Ground Force Control

You can control the units stance en route AND upon arrival. Further you can control the unit's travelling speed and set an option to throw smoke grenades or suppress an area (Shift + LMB on smoke icon), per waypoint. Only foot soldiers and drivers are selectable on this page.

Page 2: Air Force Control

This page can be used for any acting AI-pilot, yet its purpose is to be used with helicopters. You can control the height of flight (200m, 75m, 25m-default, 5m setting is to be used with extreme caution). Helicopters have 4 different waypoint types: Waypoint, Pickup, Dropoff and Full Landing. These can be changed on the fly (right click on marker, then choose from dropdown).

Page 3: High Command

As of version 1.4.4, a third page is available to control High-Command units. This page can be used to manage disbanded groups or default HC-groups. Add waypoints to selected groups by clicking on the map or override all current waypoints with CTRL+Maplick. Stances, speed and timeout settings will be applied to the waypoints. Please note that in High Command, waypoints are added without hitting the commit button.

If the player is not synced to a HC-Module, a custom HC mode will take over. Waypoints are displayed by red lines and custom markers. You can move the markers and interact with a right-click context menu.

To cycle between the pages, hit the button in the lower left corner.



You can use the F1-F10 keys to select units too, but that feature does not make much sense with groups bigger than 10 units, it is strongly advised to use teamColors to increase efficiency.

To place a waypoint, select your units and settings, click and hold down the left mouse button and drag the pop-up arrow to the position you want your units to observe.



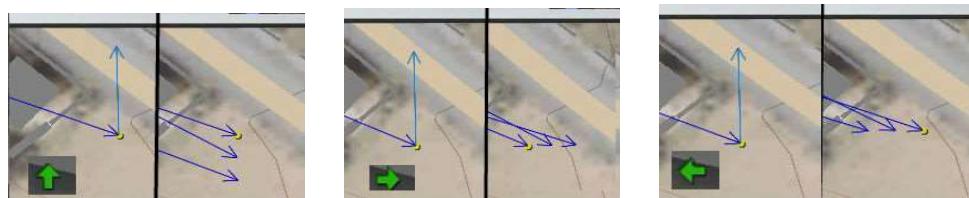
Single unit waypoints and looking directions are fully flexible. Press LMB on marker and drag it to the desired position/effect.

Unit pages: < | P | >

As of version 1.4.1, planning mode supports an infinite amount of units by utilizing unit-pages.
Selections stay active over pages.

Formation Arrow:

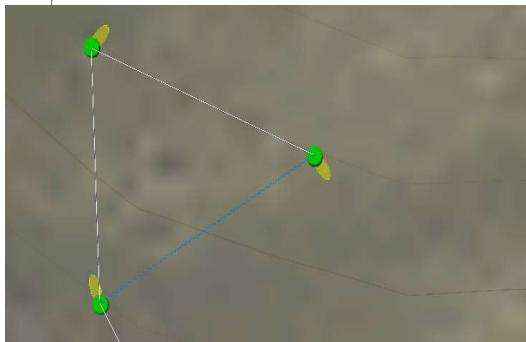
If you have more than one unit selected, the little grey arrow in the controls turns green. What happens now is abstract, but you will get the hang of it. Place a waypoint and drag the pop-up arrow to the desired looking direction. The first unit will take the exact position of the waypoint, but the other units are distributed over a line. The green formation arrow dictates how the line will be oriented, relating to the pop-up arrow. To understand this 'macro' better, set waypoints that face north and change the formation formation arrow for each one. Pay attention to the difference in the last two images.



The last, somewhat split arrow (flex formation) is actually a bundled version of single waypoints to save you some time. Each mapclick will put down a waypoint for a single unit of the selection, cycling through the selected units one after another. The respective unit button is going to turn orange to assist coordination.



Loops:



You can set a waypoint loop by holding down CTRL and dragging the mouse from the LATER waypoint to the EARLIER waypoint.

Sync & GoCodes:

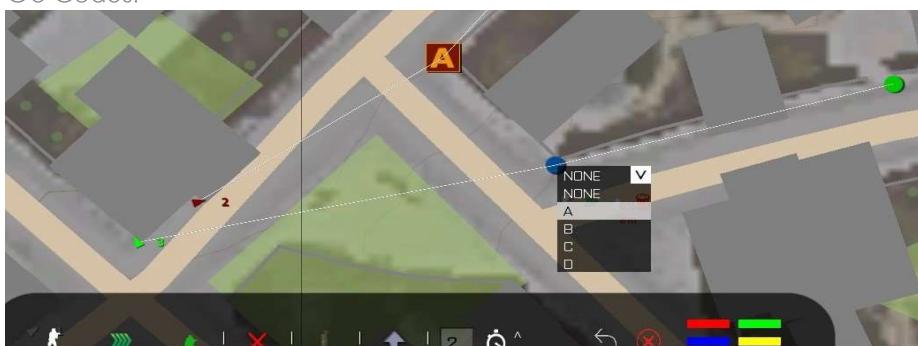
You can synchronize waypoints to achieve orchestrated manouvers such as compound raids, sweeps, patrols, insertions, extractions - the scale of which this happens on is entirely up to you.

Sync:



You can synchronize two waypoints by holding control and dragging the mouse from unit1's waypoint to unit2's waypoint.

Go-Codes:

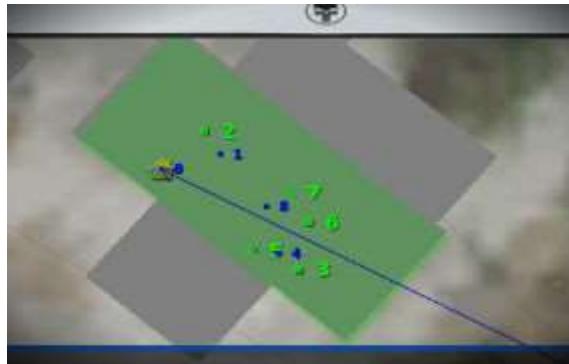


You can also synchronize the waypoints of ground troops using Go-Codes, exactly as in „Door Kickers”. Right click on the waypoint of a ground unit and select one of 4 available Go-Codes (A,B,C,D) from the context menu. Engaged go-code activators will pop up in the top right corner of the tablet.

The go-Code remains active for one second and only affects units who already reached the waypoint, meaning you can use the same go-Code over and over if you wish. If the goCode is activated before the unit reaches the waypoint, nothing will happen. Switch to „NONE” to deactivate.

Building Support:

AI now also have access to enterable buildings in planning mode. If you place a waypoint on a building, it will always default to buildingposition 0. While you are pressing down LMB, the available building positions are displayed.



Blue/small icons mean ground level, green/medium means 2nd floor, large/yellow means above 2nd floor. Decide what building position the waypoint should be at and let go of LMB. Right click on the marker to open its context menu and select the building position. As of version 2.0, the markers can also just be dragged and will snap to mannable building positions.



When applied to multiple units, they will be distributed over the building as long as there is enough space. Only the first unit will be able to change buildingPositions, so for detailed building clearing it is advised to use individual units.

Go-Codes also work in buildings, but the buildingPos selection will currently only work before activating a gocode (switch to „NONE“ enables it again).

The TeamColor Buttons can be used to quickly select/deselect the units of respective teams. To add selected units to a team color, right-click on a unit button and select your color.

High Command / Reserve:

You have an option to disband units to a Virtual Reserve. Selected units will form a new group while current orders are being converted into waypoints. Disbanded groups and HC-groups can be managed through page 3 of the planning tablet. You can rejoin all groups with the rejoin button. To rejoin individual groups, navigate to the HC-page of the tablet and right click on a group button, then select „rejoin“.

High Command Waypoint Menu with WP-actions:



C2 gives you a powerful waypoint menu for HC-waypoints. While this menu is not yet complete, you can set conditions (timeout, goCode, dayTime) and formations. C2 introduces new waypoint actions, which essentially create a dynamic waypoint, give the group a behaviour routine and wait for a condition to be fulfilled. Current infantry actions are suppression and ambush, helicopters can also land and combat land. Combat landing is best used with a solid condition such as a goCode.



When confirming a suppression or ambush action, a marked area will appear 100m north of the waypoint. You can drag (LMB) the area's center marker. Change the area's size by holding CTRL and dragging the area.

FULL FLEXIBILITY:

Single waypoints and lookingDir-markers in planning mode are fully flexible, meaning you can drag them around in real time with your LMB.

SIMPLE TRACKER:

The planning mode overlay also functions as a ultra simple force-tracker (see image above). Friendlies and known enemy groups appear on the minimap. Enemy groups can be assigned as targets - Select your desired units, right click on a enemy marker and select „ATTACK“. Note that if you have multiple units selected, the enemy targets will be distributed over your selection, preventing the good old all-AI-prioritize-the-same-enemy phenomenon and enabling super fast and stealthy takeouts.

Markers of groups belonging to the player's faction are tracked by GPS, other friendly- and known enemy groups locations are updated when opening the tablet device.

RADIAL-MENU:



C2 also offers a new in-game menu (default: TAB-Key). You can use this menu to apply features to your group's SELECTED UNITS. Hover over a field to show further selections.

You can now add or deselect your color-teams on the fly by using the respective buttons in the middle of the menu. Use your left mouse button to select/deselect units for usage with the menu (default A3) or use your right mouse button to select/deselect units for HUD mode. The purple button applies selection on all units.

The small numpad icon toggles the numpad controls on and off if you use these keys for other functions.

1. GRENADES:

While holding down TAB to keep the menu open, click on the desired grenade type, drag the indicators to the desired location and let go of the TAB key to make the throw. To cancel, click RMB. Supported Grenade addons are: ACE, RHS and SuperFlash.

2: ROE:

- FAW: Fire at will (default A3)
- FOT: Fire On Target: Units will only engage issued targets. This is useful in stealth missions, where you can use this to prevent the AI from wildly engaging targets and blowing your cover. DO NOT FORGET YOU ISSUED THIS!
- „Fire on my lead“: Units will hold fire until you fire your weapon. Also triggers 5 seconds after throwing a grenade.

3: REFRESH:

- LMB to refresh your group.
- RMB to order units to follow you - this can be used to fix an A3 bug where units will not return to formation
- Shift + LMB: Unstuck selected units (teleports unit to near empty space unless enemy within 200m has a line of sight).

4: AI AUTO FUNCTIONS

- Auto-view: Snap units out of a forced looking direction
- Auto stance: Change scripted stance to „auto“ - may have to press ~ /7/9 to become effective
- Find Cover (beta): Selected Units will try to find cover from enemy units
- AI-Healing menu (supports ACE plus a variety of healing systems)
- Re-Arm (beta): Selected units will rearm at objects/bodies within 50m. Currently only supports ammunition, switching weapons to be implemented.
- For a macro of resetting view direction and stance, hit the brain-button

As of version 1.4.2, the radial menu also contains unit stances and the ability to disable a unit's auto-danger.

QUICK FORMATION :



As an alternative to the default A3 formation selection, you can access a visual menu to select your group's formation by holding down Ctrl+F and then clicking on your selection.

GTI-GRENADES for player :



By default, press and hold the H-key and drag the indicators in the desired position. Note: For throwing an object through a delicate path (ie window), 3rd person view is recommended. To cancel the grenade option, press your right mouse button.

SUPPRESSION / REMOTE 40mm:



C2 offers a simple option for suppressive fire. Select unit/s in the default A3 selection, then press/hold the suppression hotkey (default T) and drag the indicator to your desired position. As of version 1.4, height is no longer controlled by the MouseWheel. Simply aim at your desired position, the indicator will pick up it's environment and stick to walls/buildings/etc.

Units providing suppressive fire will still react to other known targets that cause a threat. Heavy Vehicles should engage targets with appropriate weapon system.

REMOTE 40mm:

Ordering a remote grenade launch works just like suppression, but using your GTI-grenade key. (default H). The function becomes active once you have units selected (F-Keys or C2). Note that C2 will filter out a unit with a suitable weapon and vision on the target. So you can just select all units and give the order while C2 does the rest.

SUPPRESSIVE FIRE ZONES:



As of version 2.0, C2 contains a function to draw a VBS-style suppression firezone. Unit selection is based of your A3 group interface. If no unit is selected beforehand, all units will be selected. To activate the overlay, hold SHIFT+T. While keeping the buttons pressed down, drag a rectangle over the desired area. When letting go of the keys, the units will engage the area.

ZEUS:

C2 gives a new 'mock-remote' function to the ZEUS operator. Unfortunately this only works with non-forced ZEUS, meaning that the operator has to be an actual unit that is synced to a ZEUS module. The ZEUS unit can be far away from all action, he just needs to exist.



CTRL+SHIFT+LMB on any curatorable AI-group switches the operator to control that group's leader, as long as there is no player within that group.

To exit, hold down LShift+Y. You can map it to the same as your default ZEUS button, but you may have to hit it twice or more to get out. This feature is 100% beta and large sessions with it are not advised.

TIP: There is a mysterious urge to keep formation within the Zeus AI . doMove/moveTo, the commands issued to units by C2, usually override the AI's formation desire. Within Zeus, they will return to formation after arrival, so if you want them to stay there you should order them to stop (~ - 1 - 6) before commanding.

CONTROLS:

HUD MODE:

Select Individual Unit:	Ctrl + (F2-F10)
Select Ind. Units 11-20:	Ctrl + C2_SHIFT + (F1-F10)
Select All Units:	4
Select Fireteam (Red,Green,...):	5-9
Change Formation:	C2_SHIFT + MouseWheel
Change Formation Direction:	MOUSEWHEEL (scroll speed sensitive)
Change Formation Spacing:	C2_CTRL + MouseWheel
Change WP Stance:	C2_ALT + MouseWheel
Suppression Selection:	T
Suppression Zone Selection:	SHIFT + T
Player GTI Grenade:	H
Remote Grenadire:	H, when units are selected.

PLANNING MODE:

Buttons are self explanatory and have tooltips. Further:

Open Tablet: Shift + TAB

Select Unit 1-10: F1-F10

Add/Deselect Unit 1-10: Shift + F1-F10

Select Unit 10-16: Ctrl + F1-F10

Add/Deselect Unit 10-16: Ctrl + Shift + F1-F10

Select Tablet Page: 1 / 2 / 3

Target Known Enemy group: RMB on enemy marker, then select „Attack“

Select GoCode: Right Click on a groundUnit WP, then select GoCode. Activator on top right.

Add WP: Hold down LMB and drag arrow in desired looking direction.

Enable suppressive fire: Shift + Click on smoke grenade icon

Sync/Loop WP's: Hold Ctrl, press LMB on WP1, then drag green sync line to WP2.

For further details please refer to the full demo/tutorial videos:

https://www.youtube.com/playlist?list=PLs8Vc0QqlzM0yt22hRT28o-mtjhg-EO_W

Keep in mind that the videos are not all up to date due to being released alongside old versions of the addon.

ADDON SUPPORT:

- ENHANCED MOVEMENT by Bad Benson

When addon is active, HUD-Mode includes a custom EHM formation. Units will move to the position and climb over obstacles.

- AIC / ADVANCED AI COMMAND by Duda

When addon is active, RMB on HC group icon will switch to the HC-page and select the group.

Waypoints can be issued through the planning mode overlay, all settings and functions are transferred into AICs waypoint management. There is a slight issue between C2, AIC and the A3 engine - I have automated necessary UI switches, but please excuse the jumpy UI changes when using both addons interfaces at the same time.

- ENHANCED RAPPELLING by Duda

When addon is active, the additional rappel-waypoint type becomes available for helicopters in planning mode. If C2 detects the waypoint on top of a building, the helicopter will access Duda's function to guide the chopper to a precise location where units will rappel automatically before the chopper continues its route.

- ACE3

C2s healing actions are compatible with ACE healing system.

IMPORTANT FACTS:

There are two levels of stance commands in Arma 3: Engine (player controls) and scripted (C2).

Engine stance is what you reach with X-Z-Z (crouch) for example. These commands have priority over scripted commands, meaning that they will override any orders you make with C2.

C2 STANCE COMMANDS ONLY WORK WHEN ENGINE STANCE IS SET TO „AUTO“. (x-7-9)

It is best practice to always remain in „AUTO“ on engine level and use C2 to manage your unit's stances, as you have full flexibility across the different interfaces. Only use engine level stances to purposely force the unit to break from its scripted orders, for example go prone until an immediate threat is taken care of - then set it to „AUTO“ again.

DISCLAIMERS:

This addon is in no way designed to replace, but to compliment the already existing Arma 3 controls. Use all assets in combination to achieve best results.

Have I spent countless hours on programming this and trying to make it bug free?

Absolutely. Am I an experienced programmer/scripter/modder? Nope, not at all. I do this for fun and I like to think it makes me think more structured and logical.

The addon can max out the AI unit's within the player's group. If this is undesired, it can be turned off in by adding this line to the mission's init.sqf:

MCSS_C2_ADJUSTSKILL = false;

C2 is fully MP compatible.

CREDITS:

C2 proudly utilizes the GTI grenade throwing system by ZAPAT.

Building smartpos concept also developed in collaboration with ZAPAT.

Make sure you try GTI - Get Tactical Interface!!

KNOWN ISSUES:

- Action menu not working? Just bring up the radial menu or planning tool once to make it go away.
- Anything not working or displayed correctly? Use the refresh function.
- GoCode markers can not be moved yet (to be addressed soon)
- Some missions can interfere with the reserve function (ie classify units as obsolete and delete them)
- re-joining units from reserve will lose data of current planning session.
- Some missions can break the addon by removing keybinds. Most other bugs can be tackled by using C2s refresh function (available in radial menu and planning tablet).