CM50175
Research Project Preparation

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Born Ready Games

- Guildford-based ‘indie’ games studio
- Sucessful ‘Strike Suit’ franchise
  - Two games across five platforms
  - Space-based fighter combat at large scale
  - ‘Play a key role in a larger story’
- In-house art team, publishing, PR

Born Ready Games — Strike Suit Zero

Strike Suit and capital ships

Born Ready Games — Strike Suit Zero

AXE fighter craft and
Thule research station

Art Pipeline

- High production overheads per asset
- Duplication of effort
  - Pristine mesh and textures
  - Damaged mesh and textures
  - Destroyed mesh and textures
- Static damage-based system for swapping meshes
- Procedural impulse vectors for detroyed meshes
- Larger ships have independent weapon hardpoints
- Relatively low variety of ship models in current game

Procedural Destruction

"The aim of the project is to explore and implement a declarative approach to the modelling of structure, so that reasoning about the effects of damage can take place over a knowledge-based representation from which a rendering can be synthesized automatically. The representation evolves over time in response to the damage inflicted, but could also be subject to other forms of failure arising from other environmental events."

— J. A. Padget

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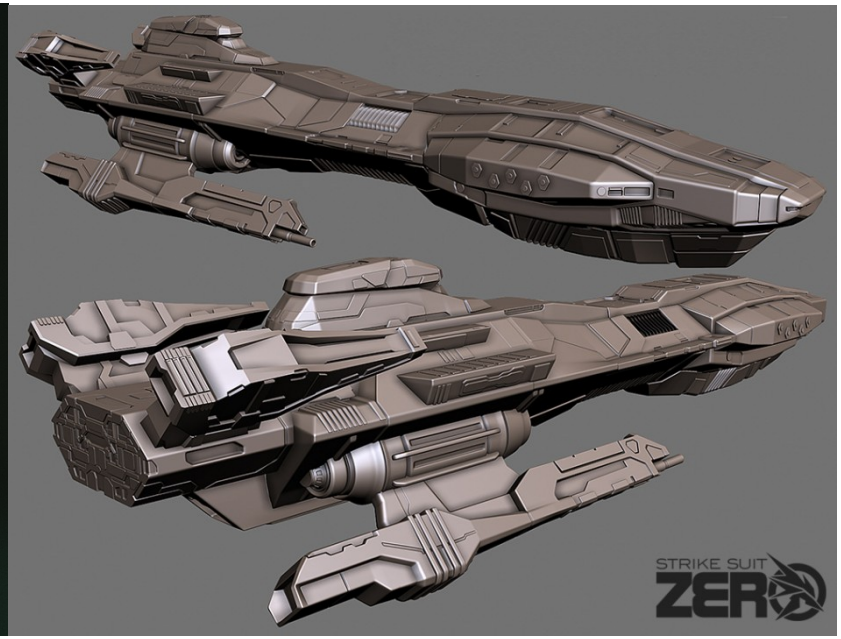
- Research and build a procedural destruction system
- Generate custom damaged and destroyed appearances
  - Structure-dependent deformation
  - Realistic response to damage type
- Real-time performance necessary

Context — Sample Capital Ships

U.N.E carrier ‘The Arcadia’



MUGE-class cruiser

Context — Size Comparison

AXE fighter craft vs. MUGE-class cruiser

Existing Approaches

Art Swap

- Current implementation – in-engine support
- Popular solution, used by many other games
- Low runtime cost

However

- High production cost - multiple asset versions
- Visually identical for every instance

Material-based destruction

Proposed Approach

Answer Set Programming

Integrated

Benefits