

HEI SYSTEMS CONCEPT SERIES

A CUSTOMIZATION PROPOSAL

ADVANCED PAINT GUNS, PATTERNS, AND SHIP APPEARANCE

A ship-customization framework for *Space Engineers 2* that expands the Paint Gun into a precise tool for color groups, patterns, camouflage, textures, gradients, and reusable fleet liveries.

The system expands visual customization without automating ship design or changing gameplay balance. It reduces repetitive painting while keeping all appearance choices under direct player control.

DOCUMENT TYPE	Ship customization and Paint Gun expansion proposal
PRIMARY SYSTEMS	Color targeting, patterns, gradients, block-to-block blending, profiles, and mod libraries
DESIGN PRIORITY	Increase visual variety while reducing repetitive hull painting

PROPOSAL OVERVIEW

Customization is one of the defining strengths of Space Engineers. A ship is not only a collection of blocks; it also represents its builder, faction, role, and engineering philosophy.

The Paint Gun in *Space Engineers 2* already improves precision, range, and control. This proposal expands it into a broader appearance system capable of editing color groups, applying textures and patterns, building camouflage schemes, and painting large hull areas efficiently.

The goal is to provide more visual options while reducing the time required to create distinctive ships. Players would still choose the colors, define the painted areas, create the original design, and control the final appearance.

TARGETED EDITING Select existing color groups and change only their texture, finish, pattern, decal, or color assignment.	PATTERN SYSTEMS Apply customizable camouflage, geometric, industrial, hazard, or faction-specific patterns to selected areas.
HULLWIDE APPEARANCE Distribute gradients, liveries, weathering, and large patterns across an entire grid without painting every block.	REUSABLE LIBRARIES Save profiles, import custom patterns, and share fleet or faction appearance packages through mod support.

The Paint Gun becomes a visual design platform rather than only a block-coloring tool.

COLOR TARGETING AND PATTERN APPLICATION

1. COLOR-SPECIFIC TEXTURE EDITING

Players should be able to select an existing color on a grid and modify only the blocks using that color. A red, blue, and white ship could therefore have its blue sections changed without affecting the red or white areas.

The selected color group could then receive any compatible appearance change:

• Texture changes	• Surface-finish changes
• Pattern application	• Material appearance adjustments
• Decal placement	• Color replacement

Treating existing colors as editable selection groups would make large-scale customization faster while preserving the ship's established paint layout.

2. PATTERN AND CAMOUFLAGE APPLICATION

The Paint Gun should support predefined patterns that can be applied to a selected area without manually painting every detail.

• Digital camouflage	• Woodland camouflage
• Desert camouflage	• Naval camouflage
• Geometric patterns	• Hazard striping
• Industrial markings	• Faction-specific schemes

Each pattern should support player-selected colors. A woodland layout could retain its geometry while using red, white, and yellow instead of the default green, brown, and tan.

LOCALIZED AND FULL-GRID PAINT SCHEMES

3. LOCALIZED PATTERN APPLICATION

Patterns and textures should be applicable only to selected portions of a grid. The nose, wings, engine housings, armor panels, or faction-marking areas could each use different appearance settings.

• One camouflage scheme on the nose	• A different pattern on the wings
• Dedicated textures on engine housings	• Faction markings on selected armor panels

Localized application preserves exact player control over where each pattern, texture, and finish appears.

4. FULL-GRID PAINT SCHEMES

Players should also be able to distribute an appearance profile across an entire connected grid. Suitable options include digital camouflage, faction liveries, industrial layouts, racing designs, weathering, and gradient transitions.

For example, a digital camouflage pattern could transition from bright red at the bow to dark black at the stern. The system would distribute the selected scheme across the hull rather than requiring thousands of manual paint actions.

Large-scale application accelerates execution, but the player still selects the pattern, colors, direction, coverage, and final result.



PATTERN CONTINUITY AND SAVED PROFILES

5. PATTERN BLENDING BETWEEN BLOCKS

A basic implementation could apply a texture independently to each block face, but this would create visible seams and repeated pattern breaks. A more advanced system should recognize neighboring faces and continue the pattern across adjacent blocks.

Continuous projection across connected surfaces would provide:

• Smoother camouflage schemes	• Cleaner gradients
• Continuous markings	• Better faction insignias
• More realistic hull appearance	• Less visible repetition

This would help large vessels read as cohesive vehicles rather than collections of individually textured cubes.

6. SAVED PAINT PROFILES

Players should be able to save a complete appearance configuration and apply it to future ships as a reusable profile.

• Colors	• Textures	• Patterns
• Surface finishes	• Gradient settings	• Decal layouts

Saved profiles would support factions, server communities, roleplay groups, fleets, and industrial corporations by maintaining a consistent visual identity across many vessels.

PATTERN LIBRARIES, MOD SUPPORT, AND BENEFITS

7. LOCAL PATTERN LIBRARIES AND MOD SUPPORT

The system should support local pattern libraries and community integration so players can expand the available appearance options without requiring every pattern to be supplied by the developers or be downloaded by servers to use.

• Save custom patterns	• Import community-created patterns
• Share faction paint schemes	• Build personal customization libraries
• Download new camouflage packs	

Because these assets primarily affect appearance, they could greatly expand creativity while having minimal effect on gameplay balance.

8. BENEFITS TO SHIP CUSTOMIZATION

GREATER CREATIVITY Players gain far more options for creating distinctive ships and visual identities.	FASTER CUSTOMIZATION Complex schemes can be applied in seconds rather than requiring hours of manual painting.
STRONGER FACTION IDENTITY Groups can establish recognizable liveries across entire fleets.	IMPROVED ACCESSIBILITY Players without advanced artistic experience can still create visually polished ships.
BETTER FLEET COHESION Organizations can keep many vessels visually consistent.	EXPANDED MODDING Community pattern libraries can extend the system far beyond the default content.

CONCLUSION

The Paint Gun is already one of the most useful customization tools introduced in *Space Engineers 2*. Expanding it into a complete pattern, texture, and appearance system would significantly deepen visual customization while reducing repetitive work.

Color-specific editing would preserve existing paint layouts. Localized and full-grid pattern tools would support both detailed control and rapid hullwide application. Seamless block-to-block projection would create cohesive liveries, while saved profiles and community libraries would support faction standards and long-term reuse.

The result would be greater creativity, stronger faction identity, improved accessibility, better fleet consistency, and a richer visual experience across every building style.

COLOR TARGETING Uses existing colors as editable groups for texture, finish, decal, pattern, and color changes.	PATTERN APPLICATION Supports customizable camouflage and markings on selected areas or across a full grid.
SURFACE CONTINUITY Projects patterns across neighboring block faces to reduce seams and repetition.	REUSABLE ECOSYSTEM Profiles, libraries, sharing, and mod support enable consistent fleetwide visual standards.

The Paint Gun would evolve from a simple coloring tool into a precise, scalable, and community-expandable ship customization platform.