cpacs
A Common Language for Aircraft Design

DLR Deutsches Zentrum für Luft- und Raumfahrt
German Aerospace Center

CPACS Stakeholder Meeting

Info sheet on the proposed CPACS refinements

Release focus

v3.5.1

Systems • Decks • Tanks

Purpose: Invitation to review the proposed v3.5.1 refinements
Audience: CPACS developers, tool maintainers and integrators, domain experts on systems, decks, and fuel tanks

Background

CPACS v3.5 introduced two major capabilities: the capability to model **complex system architectures** and **novel tank geometries**. Based on first implementation experience, three closely related refinement proposals are now on the table for the upcoming v3.5.1 release. The stakeholder meeting is intended to align on scope, migration impact, and release readiness.

Topics proposed for discussion

Issue	Topic	What changes are being proposed?
#858	**Systems**	• Refine the geometry definition of pre-defined system elements. • Remove scaling from component placement at aircraft level. • Keep different-sized components as separate system elements instead of scaled variants.
#859	**Decks**	• Align *deckElements* and aircraft-level decks more closely with the systems concept. • Replace the *boundingBox* approach with the same primitive-based geometry logic and a *representation* attribute. • Use consistent 3D base types for deck-level instantiation.
#860	**Tanks**	• Move vessel-based tanks to *aircraft/model* level using *parentUID* instead of fuselage-only nesting. • Allow placement in fuselages, wings, nacelles, and other geometry components. • Refine naming and vessel content definition, including more flexible internal structures.

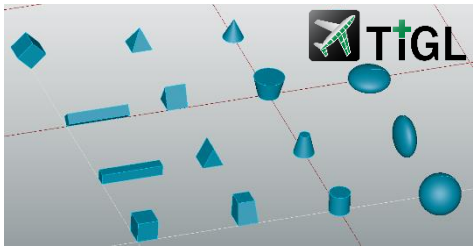
What stakeholders are asked to review

Key review questions

- Does the proposed scope fit a maintenance release such as v3.5.1?
- Are the semantics and naming sufficiently clear for implementers and users?
- What migration or backward-compatibility guidance is needed for existing models and tools?

Intended meeting outcome

- Shared understanding of the rationale behind the three refinements.
- Stakeholder feedback on technical scope, terminology, and expected model impacts.
- Agreement on whether the proposals should move forward as part of the v3.5.1 release package.
- Identification of any follow-up actions for schema text, documentation, examples, or implementation notes.



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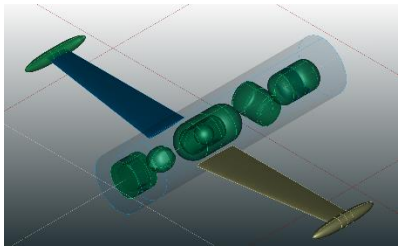

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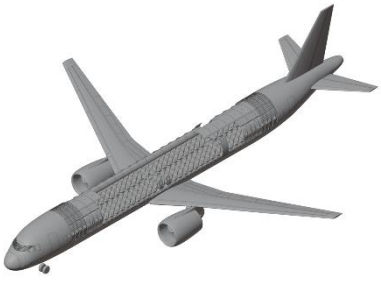

J.-N. Walther, "Knowledge-based engineering to provide aircraft fuselage design details for multidisciplinary and multifidelity analysis model generation", Deutsches Zentrum für Luft- und Raumfahrt e. V. (DLR), 2024. DOI: 10.57676/9GHG-3F88.