

FS4A 2025 – Session 5 Documents

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Document Overview

- SES Structural Equivalency Spreadsheet
- SE3D 3D Model to accommodate the SES
- IAD Impact Attenuator Datasheet

[EV only] ESF – Electrical System Form

[EV only] ASES – Accumulator SES

[HY only] HSF – Hybrid Safety Form

[H2 only] H2SF – Hydrogen Safety Form

(Documents related to the static events not covered in this presentation)

Documents - General

- There are a lot of Rules – impossible to check everything at the event
 - We spend a lot of time reviewing the documents at least 10 hours per team – this is all done by volunteers!
 - Documents try to prevent „bad awakenings“ at the event
- We don't ask for documents just to get on your nerves

SES - Structural Equivalency Spreadsheet

- The document is the same for all events using the FS Rules
- The review process is organised on a European level
- For details of the SES document, please check out FSG Academy slides (must be logged in to access):

[FSG Academy 2025 "Tech Inspection" Slides](#)

IAD – Impact Attenuator Datasheet

- Many teams use the „standard IAD“
- There is only minimal weight savings possible with alternative Designs
 - Poll: are you interested in dealing with crash test?
- Working on streamlining the documentation for standard design
- Long-term goal: online form like ESG

ESF – Intention

- Help Teams
- Give Feedback before Event so errors can be fixet with some time
- Lower the Risk teams have to fix things at the Event
- Passed ESF does not mean passed Scrutineering, Open ESF does not mean failed Scrutineering.

ESF – Numbers

- 10 Events in Europe (AA, A, CH, Czech, East, G, N, PL, PT, S)
- 169 Teams at all events
- 9 Forms / Team
- About 20min / Form for Reviewer
- -> about 500 hours to review
- About 20 Reviewers
- -> about 25 hours / Reviewer

ESF – Do's & Dont's

- Fixed Values are fast to review
- Schematics are difficult
- No essays, Description should not be necessary
- Good variable name, try to use names mentioned in the rules
- Consistent name over pages, different boards if they are one function (EG Signals from Battery to Dashboard)
- Do not overload pages. Only one functionality per page
- Current/Signal flow from top to bottom, from left to right

NEW Document: Accumulator SES (ASES)


- Same topics as „accumulator“ tabs in the old SES, only new structure
- Hopefully: faster review process

Structural improvements

- Reworked structure for integrating datasheets

Twill 22x				
Carbon Fiber				
mechanical properties shown?	NO		Fire rating shown	NO
Data Sheet				
Insert Image of relevant Datasheetpages (Name of Material must be visible on the pages) Highlight the relevant areas for fire rating, mechanical properties In case of shared datasheets of more material please highlight the used material				

NEW Document: Accumulator SES (ASES)

Used for structural parts?	No	--> Do not have to follow T10.	Used for structural parts?		--> Must follow T10 completely in any case.
Electrically conductive?	No		Electrically conductive?		
Positive Locking mechanism			Positive Locking mechanism		
Show (CAD) pictures of the fasteners and complementary explanations if necessary.			Show (CAD) pictures of the fasteners and complementary explanations if nec		
					
<p>New tab for fasteners within the accumulator</p>					

HSF – Hybrid Safety Form

- Currently in „Word“ format, Template (2024) can already be found on homepage, No plan for significant changes in the template
 - We want get a good overview of your system design
 - stop bad design choices early
- Easy & fast tech inspection

H2SF – Hydrogen Safety Form

- Document template is currently „under construction“
 - But generally similar to Hybrid
 - stop bad design choices early
- Easy & fast tech inspection



Q&A Session

If you have further questions,
please write us at Rules@fsaustria.at

Q&A for Session 5

Question	Answer
Some needed things in SES are not mandated in the rules nor are they clearly visible in the SES itself. These kinds of rules may only be found in the academy slides. Why is that?	The SES is of course not intended to introduce new rules but in many cases it is not practical to put lengthy formulas and equivalency calculations into the rules, so the rules will just say "it has to be equivalent to XYZ" and then the formulas are in the SES.
If SES is crucially important to the competitions, why would it not be standardized so everyone could get an easy start to building a safe chassis which they can race with?	The SES template is the same for all events which use the FS Rules and there is a collaboration on a European level (excluding Italy and UK) for checking the documents.