

CLEAN SKY 2 METALLIC CARGO DOOR

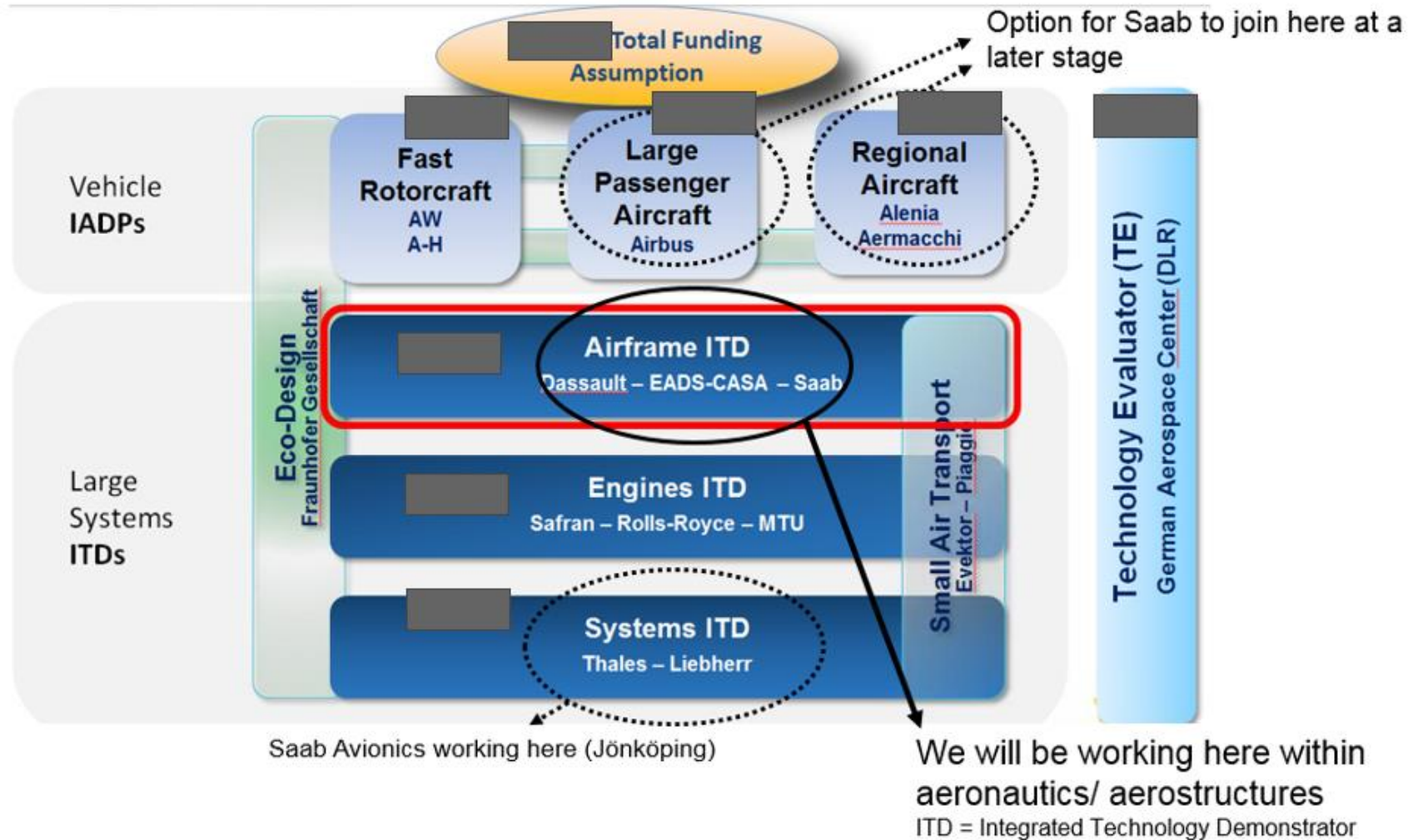
Overview of SAABs activities and plan going forward

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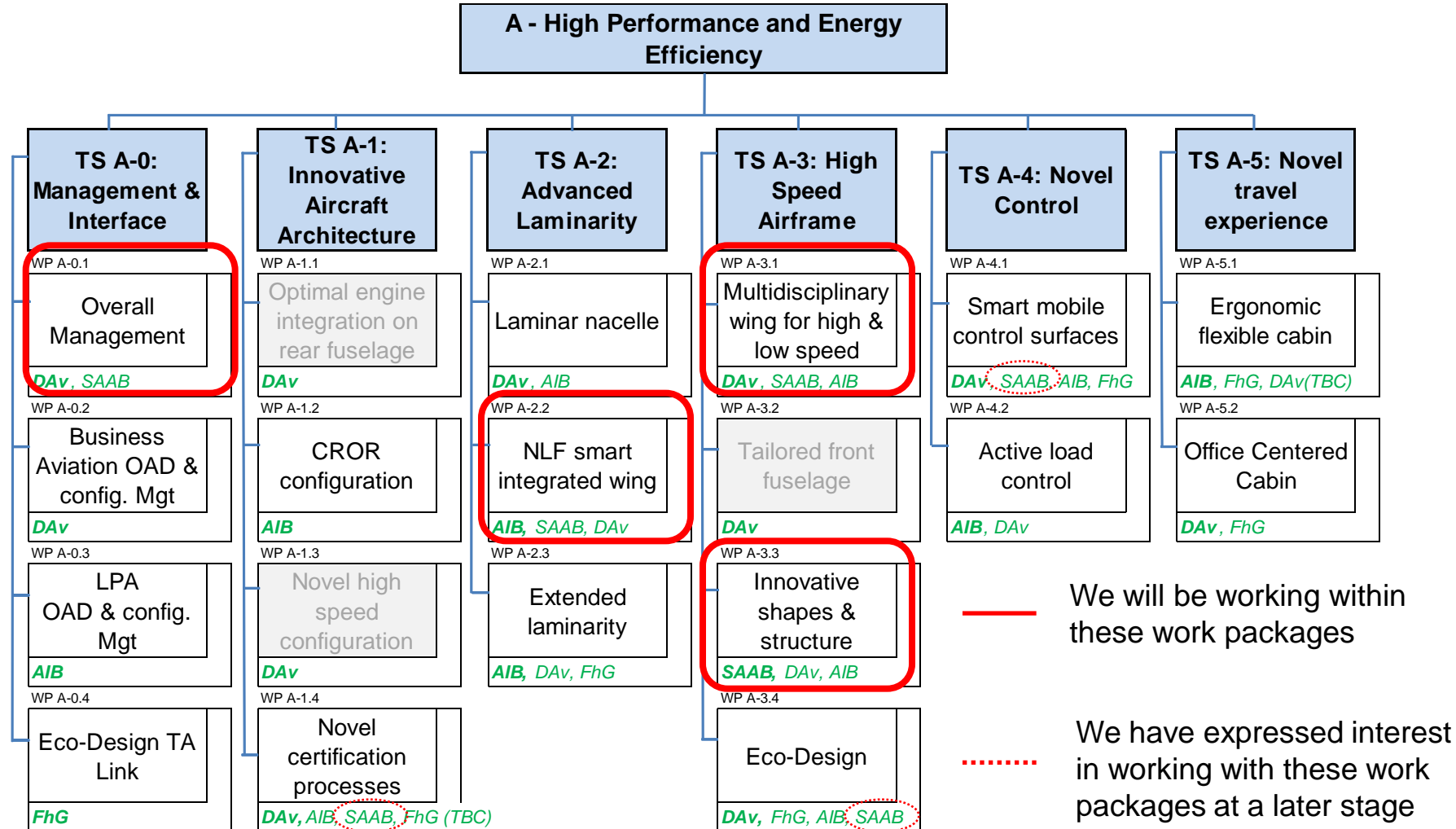


CLEAN SKY 2 INTRODUCTION





WORK BREAKDOWN STRUCTURE: ACTIVITY LINE A





OBJECTIVE AND GOALS

- CS2 Cargo Door demonstrator
 - Metallic door (4 demonstrators)
 - 1 Fully operational and part of Airbus LPA demo
 - 3 Technology demonstrators at Saab
- Focus on low cost manufacture technologies
 - Reduced RC
 - DFMA (through increased automation)
- Reduce rigging time
- Reduce weight





ACTIVITIES SO FAR

- 4 CFPs have been initiated, 3 more are planned
 - CFP3
 - Guidelines for Metal Additive Manufacturing
 - Orbital Drilling of small holes in aluminum
 - Compact drilling and fastening unit
 - CFP4
 - Novel manufacturing of low weight skin without chemical milling
 - Planned (CFP5)
 - Friction Stir and Laser Beam Welding



3rd Call for Proposals (CFP03)



| | | | |
|--|--|-------------|---------|
| Type of action (RIA or IA) | RIA | | |
| Programme Area | AIR | | |
| Joint Technical Programme (JTP) Ref. | WP A-3.3 Innovative shapes & structure | | |
| Indicative Funding Topic Value (in k€) | 800 k€ | | |
| Duration of the action (in Months) | 36 months | Start Date* | Q4-2016 |

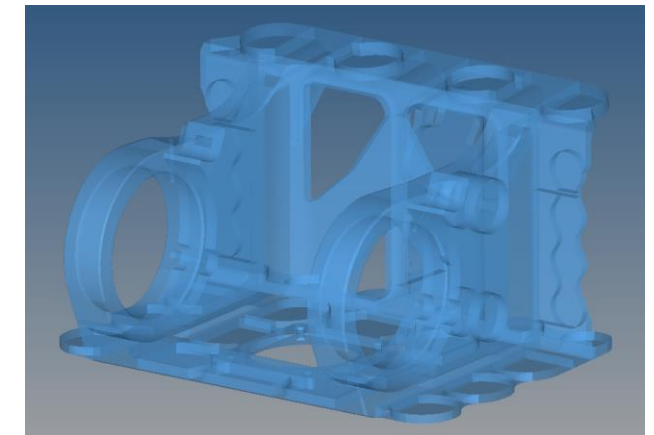
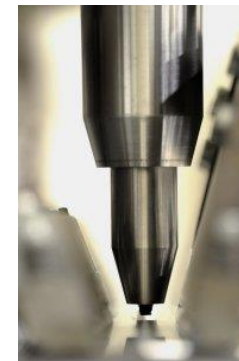
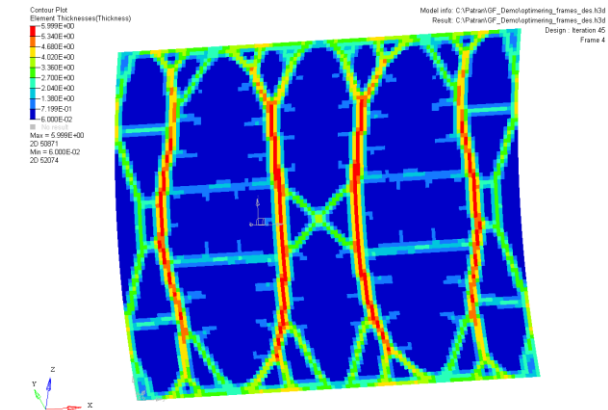
I. Topic Description

| Identification | Title |
|---|---|
| | Design Guide Lines and Simulation Methods for Additive Manufactured Titanium Components |
| Short description (3 lines) | |
| Metal additive manufacturing (AM) allows complex and unique product geometries which can reduce both product cost and weight. Guidelines and best practice methods for AM titanium need to be established as well as finite element topology optimization (TO) able to handle AM characteristics. | |



TECHNOLOGIES/AREAS OF INTEREST

- Forming Al skin without chemical etching
- Additive manufacture
- Friction stir & laser welding
- Adhesive bonding
- Orbital drilling, automated fastening/sealing for OWA
- Metrology of the future & Industry 4.0
- Powder Coating of metallic parts



THE FINAL PRODUCT



→ But in metal.....and better!



FSW & LBW CALL FOR PROPOSAL

| | | | |
|--|--|-------------------------|---------|
| Type of action (RIA or IA) | RIA | | |
| Programme Area | AIR | | |
| Joint Technical Programme (JTP) Ref. | WP A-3.3 Innovative shapes & structure | | |
| Indicative Funding Topic Value (in k€) | 1200 k€ | | |
| Duration of the action (in Months) | 30 months | Start Date ¹ | Q4/2017 |

I. Topic Description

| Identification | Title |
|---|--|
| | Optimisation of Friction Stir Welding (FSW) and Laser Beam Welding (LBW) for assembly of structural aircraft parts |
| Short description (3 lines) | |
| The objective of this research topic is to achieve a lighter assembly solution and reduce manufacturing costs for a typical aluminum aircraft assembly through designing for FSW and LBW. An important aspect is achieving cost <u>effectivity</u> in relatively short welds, typically 1-2m. | |



SAAB

