4th Symposium of Collaboration in Aircraft Design

Closure session

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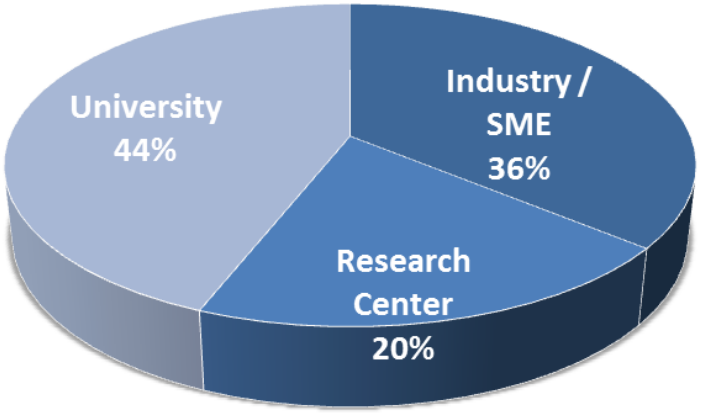
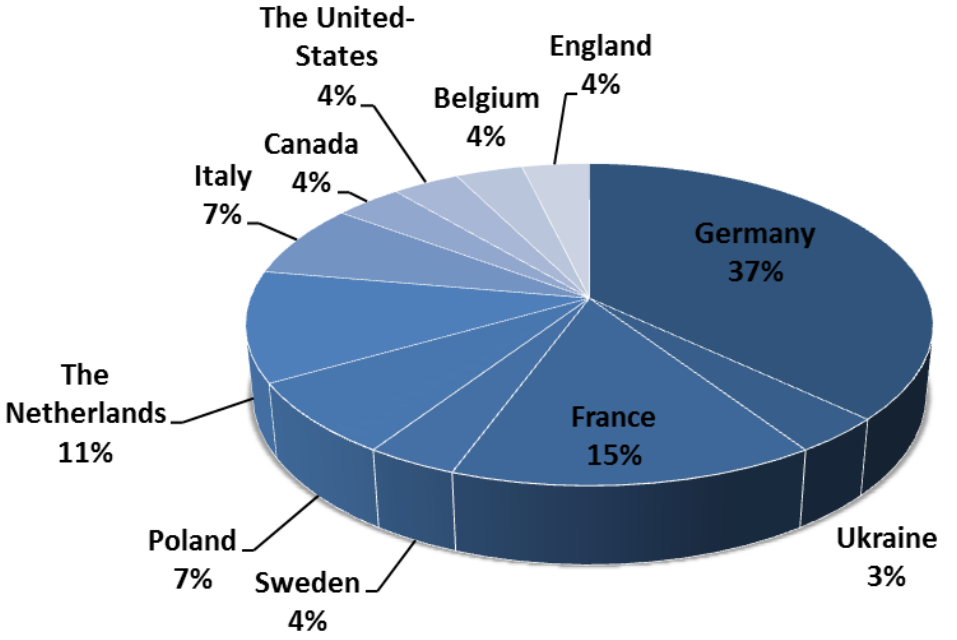
THANK YOU


CEAS SCAD
25•27 November 2014
ONERA TOULOUSE • France
CEAS•SCAD
Collaboration in Aircraft Design Symposium

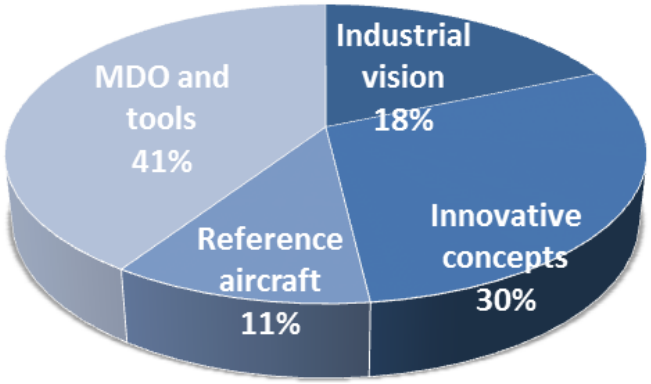
Overview

- 27 presentations





Company nationality has been considered



Industrial vision

- Interest in hybrid propulsion system
- Review of configuration candidates for a flight demonstrator
- Testing of technologies on large scale aircraft
- Geometric centric approach
- Intermediate tools
- Assessment of detailed systems impact at A/C level
- High Bypass geared turbofan engine with thrust vectoring

Innovative concepts

- Strut-braced wing and box wing
  - Which mission?
  - Critical areas
- Blended Wing Body
  - Control aspects
  - Certification
- Boundary layer ingestion
- Aerial refueling operations: a thorough approach
- Keep it simple and efficient: « Smart Turboprop »

Reference aircraft

- Very positive initiative with many options
  - Model of a generic short range aircraft (today's technology)
  - Next generations of aircraft (2020 / 2035 / 2050)
  - Flying aircraft
- Many hurdles: liability issues, IP,…
- Proposal for a step by step approach
  - Support TUD as CEAS/TCAD in their proposal to Fokker
  - Perform a sizing based on the mission used for CSR-01 (L0 tools)
  - Results comparison in a table available to all contributors

MDO and tools

- Integration of higher fidelity analysis tools
  - Structure sizing
  - Aerodynamics and impact on flight dynamics
  - Aeroelastics
- Use of metamodels is key
- More disciplines are taken into account earlier in the process
- Design environments providing
  - Advanced coupling and process monitoring
  - Innovative algorithms
  - Improved visualizations

Conclusion

- 4th SCAD has been an opportunity
  - To discuss about finalized, ongoing and possible activities
  - To compare approaches for similar problems
  - To provide inputs on possible improvements
  - To exchange with AIAA

Global benefit for the Aircraft Design community

KEEP UP THE GOOD WORK !!!

- Terms of reference / Activity map / Next steps

Terms of Reference TCAD

- ToR are formally required by CEAS.
- Should be as simple as possible.
- EWADE and SCAD remain independent sections of TCAD.
- TCAD organizes plateaus to exchange information.
- Participants are responsible for the content they share.
- Information are expected to be non-confidential.

Terms of Reference TCAD

- 2+2 Chairs (EWADE+SCAD)
- Chairs are elected in years of CEAS conferences.
- Chairs report towards and communicate with CEAS board.
- Official statements e.g. on the support of activities need to be confirmed by 2/3 of active members (EWADE, SCAD or both depending on statement)

Terms of Reference SCAD

- SCAD chairs organize the annual symposia together with local hosts.
- SCAD chairs pull information for the annual update of the activity map.
- SCAD chairs communicate results e.g. towards organizations such as AIAA TCs.
- SCAD chairs actively invite new members and maintain the list of active/passive members.

Terms of Reference SCAD

- Active member organizations are partners which add at least one activity to the activity list in that year AND „regularly“ participate in the symposia.
- Advanced information, results, the activity map etc. are directly shared among the active members only.
- All results are non-confidential and can be shared with 3rd parties.

Activity Map

- **Activity Map**: Of participants‘ ongoing research, permitting partners to get in contact and agree on collaborations if desired.
- Contains
  - Aircraft configurations
  - Design tools
  - Contact details of acting persons
  - List of publications
- Updated once per year during SCAD.

Next SCAD

Do you want the next Symposium on Collaboration in Aircraft Design to be:

a) Included in CEAS conference

7.-11. Sept. 2015, Delft, includes EWADE

b) An own event

October? Naples?

2 days + 1 day hands-on workshop?

Next steps

Shown slides will be made available at www.aircraftdesign.org after approval of authors

Aircraft Design Prediction Workshop: Further information will be circulated by RWTH Aachen (?)

Activity Map: Information pull by ONERA/DLR. Finalized list will be circulated end of January 2015.

Next SCAD: Decision by end of January 2015.