Power & Data systems

Hunting for simplification

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Safran is nearly positioned across the whole chain, with LPS acting as the strong arm of electrical power systems.
## Towards MEA

<table>
<thead>
<tr>
<th></th>
<th>A320ceo, F7X</th>
<th>A380 &amp; A350</th>
<th>Boeing 787</th>
<th>A30X</th>
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<tbody>
<tr>
<td>Wing &amp; nacelle deicing</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
<td>Electricity</td>
<td>Electricity?</td>
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<td>ECS, Start</td>
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<tr>
<td>Avionics, Lighting, etc.</td>
<td>Electricity</td>
<td>Electricity</td>
<td>Electricity</td>
<td>Electricity?</td>
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<td>Commercial loads</td>
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<td>Control braking</td>
<td>Hydraulic</td>
<td>Partial electrification</td>
<td>Hydraulic</td>
<td>Partial electrification?</td>
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<tr>
<td>Control (FCS, steering)</td>
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<tr>
<td>Configure (landing gear, TRAS)</td>
<td>Hydraulic</td>
<td>Partial electrification</td>
<td>Hydraulic</td>
<td>Partial electrification?</td>
</tr>
</tbody>
</table>
Aircraft include more functions and become more electric, impacting cost, weight and complexity in design.

Cost & weight are function of carried power but also of electrical architecture and installation.
A clear trend towards more complexity and power optimization

New functions and power optimized aircraft
- More electrical power to be distributed and increasing volume of data to be transmitted
- Electrical architecture is evolving from centralized to distributed power distribution systems
- The growing electrification and complexity of systems lead to more integrated power and data

A need to reduce costs
- Reducing RC through more integration – reduce the number of parts
- Reducing NRC through more concurrent engineering across the entire chain with the objective of simplifying
- Reducing OC through more flexibility of functions and robust products at EIS

Simplifying the current power and data systems could be the enabler for a MEA with more functionalities
The challenge of simplification is high - can we address it better than today?

**A team challenge**
- Airframers, Equipment suppliers and Certification authorities jointly challenging architectures and products, respecting the role of each player in the team
- Academia and industry jointly developing new technologies through a lean mid & long term roadmap

**Building new standards**
- Successful Technology insertion
  - Robustness and maturity demonstration methodology
  - Fit for Purpose approach for both incremental and breakthrough
- Invest in Tools and Processes
  - For better modeling and simulation, as “a learning machine”
  - For more efficient development, certification, production and operation
- New cooperation models
  - Reducing NRC for both airframers and equipment suppliers
  - Anticipating and sharing risks & revenues over the Life Cycle

Integration and robustness increase at lower costs
Simplifying Power & Data management and transport