Technology Panel
Standards and Technology

Ramón Somoza
AIRBUS MILITARY

AEROSPACE INDUSTRIES ASSOCIATION

ILS-Specification-Council council

AeroSpace and Defence Industries Association of Europe

Introduction

- Technology grows unstoppable – when I started at the university to study Computer Sciences, we still used perforated cards – and now my kids play with IPhones and tablets.
- Technology drives new standards – but standards also drive technology: The Internet would not have existed is the underlying standards (e.g., Internet Protocol) had not been previously defined.
- The following slides will briefly explain how technology and standards are related.

Technology is more than gadgets

- People often think of new gadgets such as an IPad or Xbox as “technology” – but technology may be also things such as new services, or doing things that were previously not possible.
- Examples of new technologies:
  - Provision of new services
  - Data sharing and exchange between previously separated domains (ILS, engineering, manufacturing)
  - Seamless integration of processes and workflows between different areas, partners and suppliers.
  - Enabling “emerging” information by combining data from different domains

Need for standards

- At Airbus Military we do many different things:
  - We design and build our own aircraft (e.g., A400M)
  - We convert civilian aircraft into military ones (e.g., A330 MRTT)
  - We upgrade aircraft from the competition (e.g., P3 Orion)
- We have many multinational projects, with many partners and suppliers that often can't talk easily with each other
- We need to interface to customers all over the world
- We provide Flight Hour Services, we have PBL contracts, we have contracts based on mission success and even contracts where WE perform the mission.

➢ And the information standards used for exchange NEVER match!

Integration needs

- ILS needs to interface to Engineering and Manufacturing, and should have an interface to PLM systems.
- We need to be able to integrate multiple ILS domains, across multiple partners and suppliers.
- We need to provide integrated data for customers (e.g., for their Maintenance Information Systems) in a coherent data package that they can load “as is”, and covers all the ILS domains.
- We need to be able to accommodate different breakdowns in a coherent way.

➢ Globalization makes these integration needs more and more critical, but such integration cannot be achieved without proper standards that sets the common rules for such integration.

New technologies coming up

- A lot of new technologies have popped up that will impact or influence our specifications in the future:
  - Enterprise Service Bus
  - Web Services
  - Mobile Apps
  - 3D technologies
  - Virtual reality
  - Business Intelligence
  - Cloud Services
  - Long-term archiving
  - New security technologies

Problems for technological evolution

- The evolution of the standards face some problems to follow technological evolution:
  - In some cases, they have inherited “old” data structures and formats based on old technology (e.g., applicability codes)
  - Legacy applications will not be replaced to use new versions
  - Lack of backward/forward compatibility of standards prevents migration to newer version because of huge conversion costs.
  - Interoperability between specifications needs to be maintained, or we will lose one of the major incentives to use the suite
  - We cannot simply take the “very latest” fade because of the high risk this implies.

Recommendations for evolution

- Give integrated data model highest priority, so as to achieve full interoperability
- Need for “cross-polinization” between different specification groups
- Maintain backward/forward compatibility as much as feasible and practical – if not, migration should be easy and cheap!
- Target end-to-end integration of design-ILS-feedback-design
- Review critically past decisions and data structures, and identify whether these prevent future evolution
- Start considering how future technologies will impact the suite of ILS specifications – e.g., virtual reality, 3D models, etc.
- And above all: Let’s work together!

Thank you for your attention