CP–SETIS’ Results Workshop and ICF Transition Event

Workshop at DIF 2017
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:30</td>
<td>Welcome coffee</td>
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<tr>
<td>11:00–11:15</td>
<td><strong>Introduction and CP–SETIS overview</strong></td>
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<td></td>
<td>Jürgen Niehaus</td>
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<td>11:15–11:45</td>
<td><strong>IOS–Database – An open repository for the IOS Specification</strong></td>
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<td>Christian El Salloum, AVL</td>
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<td>11:45–12:30</td>
<td><strong>ICF: The IOS Cooperation Forum</strong></td>
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<td>Frédéric Loiret, KTH</td>
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<td>12:30–13:00</td>
<td><strong>Standardization Agenda</strong></td>
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<td>Erwin Schoitsch, AIT</td>
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<td>13:00–14:00</td>
<td><strong>Lunch</strong></td>
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Programme II
ICF Transition Workshop

14:00–15:45  Projects and Project Ideas
             Some Existing Projects
             Project Ideas
             Coffee break

15:45–16:30  Open discussions of project ideas
             All participants

16:30–17:00  Way forward and next steps
             Moderator: Jürgen Niehaus
IOS – Interoperability Specification

• **Challenge:** Integrating large numbers of heterogeneous development tools into Systems Engineering Environments

• **Solution pursued in ARTEMIS–IA:** Develop Open Standard for Development Tool Interoperability (IOS – Interoperability Specification)
  
  – Since the very first days of the ARTEMIS JU, this challenge has been a major concern of many ARTEMIS–IA members
  
  – Large scale **flagship projects** centered around this topic
    
    • Main development line: iFEST, CESAR, MBAT, CRYSTAL
    
    • Additional contributions: SAFE, HOLIDES, EMC2, ENABLE–S3 and others

  – Most of these **projects were incubated** (ie., conceived and prepared) by ARTEMIS–IA members, meeting within „Project Incubation Workshops“ organized by ARTEMIS–IA Working Groups (ie., on Tool Platforms, Standardization, etc.) and/or ARTEMIS–IA CoIEs (EICOSE).
IOS – Structure and Future Activities

- IOS is **not a single standard**
  - IOS is a set of specifications, covering a large spectrum of industrial development processes
  - IOS builds upon **existing standards and specifications**, wherever possible
    - Like OSLC, FMI/FMU, ReqIF, ...
  - IOS contains **extensions** to existing standards and specifications
  - IOS contains **bridges** between existing standards and specifications.
IOS – Structure and Future Activities

Interoperability Specifications (IOS)

Lifecycle Data Integration

Data Synchronization/Exchange

Bridges

On-going activities from industrial use cases:
- OSLC ↔ FMI
- OSLC ↔ AUTOSAR
- OSLC ↔ ReqIF
- OSLC ↔ STEP
IOS – Structure and Future Activities

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- Thus, IOS can **not easily be mapped to a single standardization body**
IOS – Structure and Future Activities

• **IOS is not a single standard**
  
  – IOS is a set of specifications, covering a large spectrum of industrial development processes
  
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  – IOS contains extensions to existing standards and specifications
  
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• Future projects and ARTEMIS–IA members activities are expected to
  
  – extend the IOS specifications
  
  – develop tools and tool-chains (Engineering Environments) using the IOS
  
  – Drive formal standardization of IOS
IOS – Structure and Future Activities

But how do you do this without a single standardization body?

- Specification, Implementation, and any other information about IOS parts is scattered amongst various projects and existing standards
  - What is the current, most recent ‘version’ of a specific IOS part?
  - How do different parts fit together?
  - Are there parallel developments in different projects?
- What maturity does a specific part of the IOS have?
  - Are implementations available?
  - What use cases have been performed with them?
- Who are the experts for a specific part of the IOS? Which organisation uses/supports/maintains this part of the IOS?
- ...

- In the past, this worked reasonably well, because the number of projects was small. This is no longer the case
CP-SETIS

- H2020 Support Action, incubated by ARTEMIS–IA WG Standardization
  - Partners: SafeTRANS, AIT, Artemis, AYL, KTH, OFFIS, Thales, Siemens
  - Associated Partners: ABB, Airbus, ASAM, Daimler, ETSI, Volvo

- Main Goals:
  - Create a sustainable structure to further standardization activities in the area of Interoperability of Systems Engineering Tools, based upon the IOS (Interoperability Specification), a multi-standard that resulted from a multitude of past and on-going large scale R&D projects
  - update and publish a new version of the ARTEMIS–IA Strategic Agenda for Standardization
The need

A single place where all information about IOS is collected and available for all Stakeholders (IOS Repository / Database)
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INTEROPERABILITY SPECIFICATION (IOS)

SUSTAINABLE STRUCTURE AS A FORUM (PLATFORM) FOR ALL Stakeholders TO COORDINATE Activities

R&D PROJECT 1  R&D PROJECT 2  R&D PROJECT ...

SUPPLIER ...

STANDARDISATION BODY 1

STANDARDISATION BODY 2

STANDARDISATION BODY ...

PROJECT CANDIDATE 1

PROJECT CANDIDATE ...

TOOL VENDOR ...

OEM ...

IOS Cooperation Forum ICF

Funded by the European Union
The need

A single place where all information about IOS is collected and available for all Stakeholders (IOS Repository / Database)

Interoperability Specification (IOS)

Sustainable Structure as a Forum (Platform) for all Stakeholders to Coordinate Activities

Incubate new projects and provide means for sustainable achievement of project results

Enable and support coordinated standardisation

IOS Cooperation Forum ICF

Funded by the European Union
The need

INTEROPERABILITY SPECIFICATION (IOS)

SUSTAINABLE STRUCTURE AS A FORUM (PLATFORM) FOR ALL STAKEHOLDERS TO COORDINATE ACTIVITIES

R&D PROJECT 1
R&D PROJECT 2
R&D PROJECT ...
PROJECT CANDIDATE 1
PROJECT CANDIDATE ...

A single place where all information about IOS is collected and available for all Stakeholders (IOS Repository / Database)

Open to all stakeholders

Incubate new projects and provide means for sustainable archivement of project results

Sustainable, beyond the lifetime of a single project

Hosted within existing structures

Enable and support coordinated standardisation

IOS Cooperation Forum ICF

STANDARDISATION BODY 1
STANDARDISATION BODY 2
STANDARDISATION BODY ...

Funded by the European Union
ICF – IOS Cooperation Forum

- A sustainable organizational structure, where Stakeholders can meet to plan and cooperate on their IOS related activities
- Will be anchored within the ARTEMIS Industrial Association
- Supports two-dimensional Standardization of the Multi-Standard IOS
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**Horizontal Standardisation: Specification becomes part of the Multi-Standard**

- **Proposal**: Any stakeholder can propose new candidates
- **Selection**: Expert team evaluates and selects proposals to be tracked
- **Evaluation**: Evaluation of the proposed parts in industrial scenarios
- **Acceptance**: Stakeholder vote to accept new part based on evaluation results

**Vertical Standardisation: Specification becomes part of a formal standard (like OSLC, FMI...) on which it is based, using the specific ways of the associated standardisation body**
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THANK YOU FOR YOUR ATTENTION