Weather in ATM and CDM

A-CDM Context

Shared data, for example:

- Airport slots & pre-departure sequence
- Flight data processing
- Flight plan
- **Weather Information**

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Motivation

Even today, weather events affect the operation of air transport, in particular the safety, efficiency and predictability.

- Not all detectable weather phenomena are currently provided in products / services and messages
  - Three main reasons are:
    - The product exists, but it has low operational value.
    - The product exists and is used, but has to be dramatically improved, e.g. the fusion of sensor data
    - The product does not exist, but would be of great use in an operational environment, e. g. turbulence detection

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Purpose

- Reliable and accurate (time / location) predictions can optimize the current processes
- The aim is to minimize the effects of weather on all airport operations.

Three step model:

1. Functional Requirements
2. System Specifications
3. Validation

http://www.eurocontrol.int/airports-and-severe-weather

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Who is WeAC ?

- Selex and DWD as supplier of meteorological information
- AC-B as providers of communications solutions / networks for air traffic control
- DFS as end users of air navigation meteorological information

- Subcontractors:

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DLR

Avitech

Technische Universität Braunschweig

TECHNISCHE UNIVERSITÄT DARMSTADT

Functional Requirements

Answers to the following questions:

- Who are the possible end-users of the weather information?
- What meteorological information are needed?
- What user profiles have to be defined for the system?

Result -> catalog of operational requirements

http://www.eurocontrol.int/news/global-standardisation-voice-over-ip-world-air-traffic-management

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Functional Requirements

How should the weather information be presented in relation to:

Parameters

- Phenomena / events
- Spatial resolution
- Geographical classification
- Temporal prediction.

Examine the necessary sensors and sources to collect the meteorological information and meet the required parameters.

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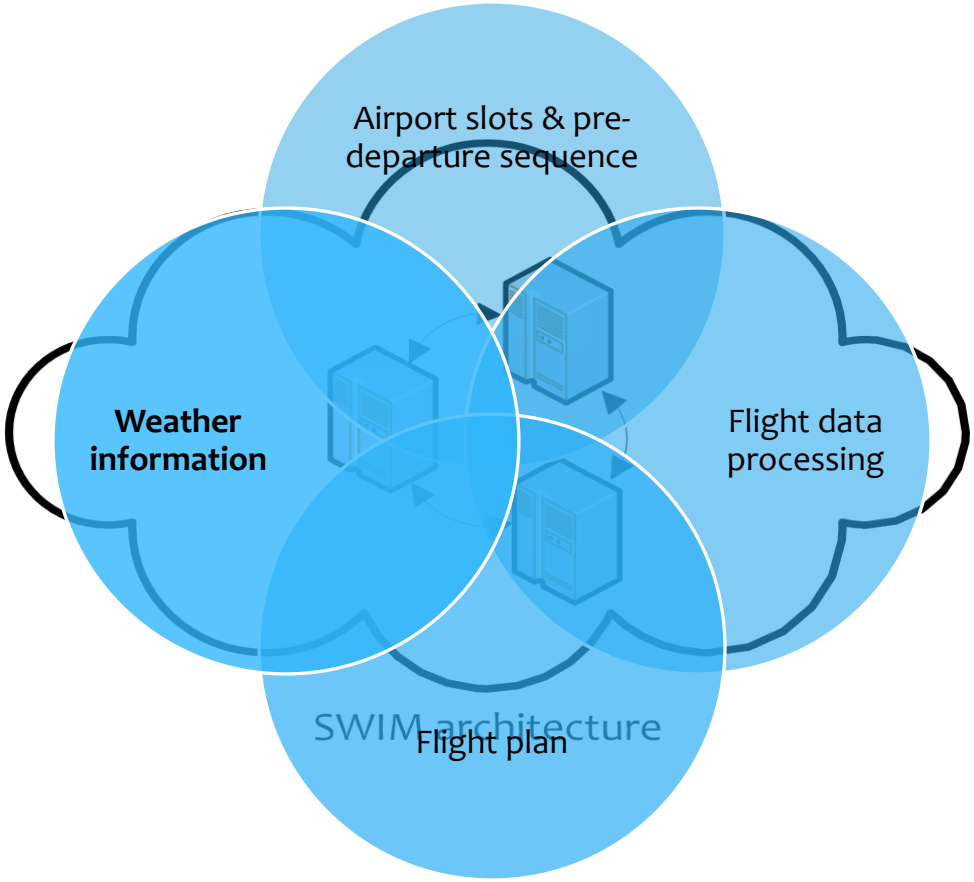
System Specifications



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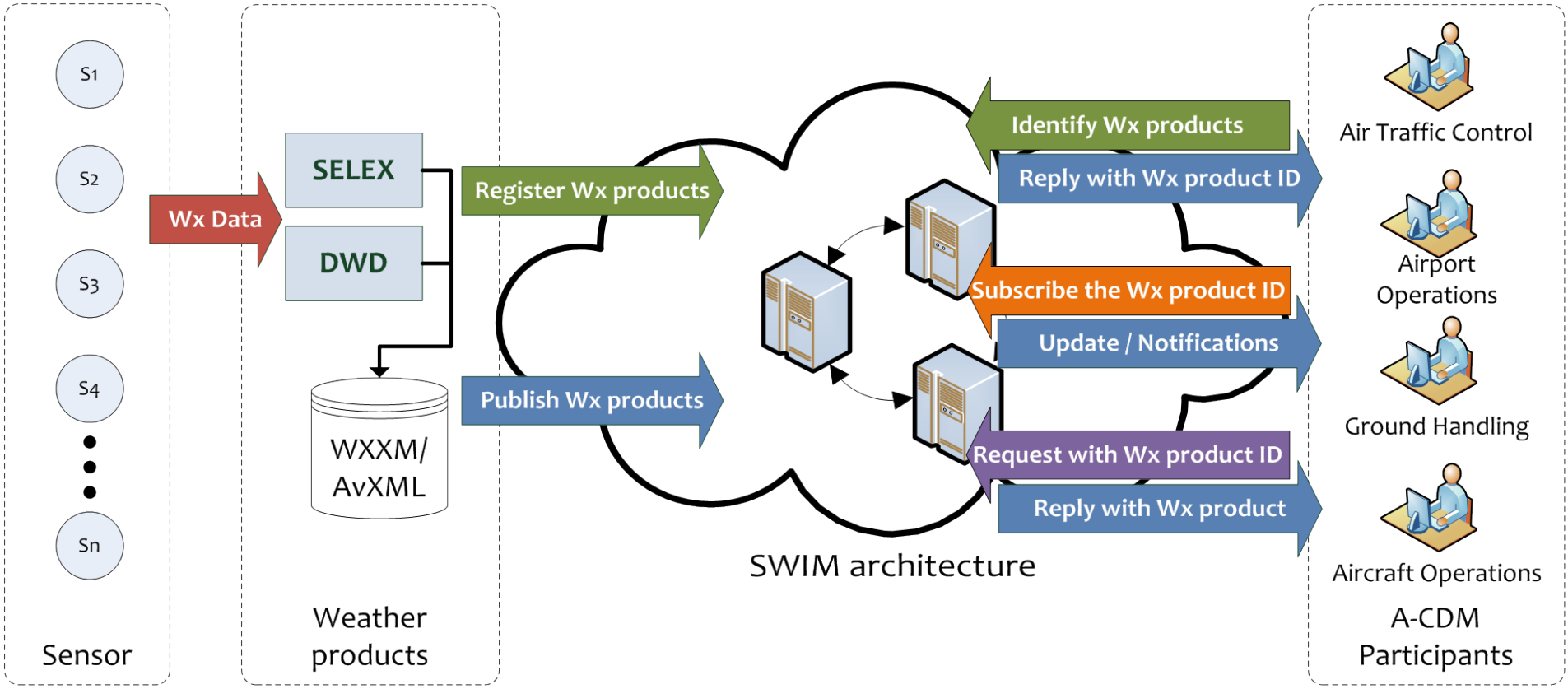
System Specifications



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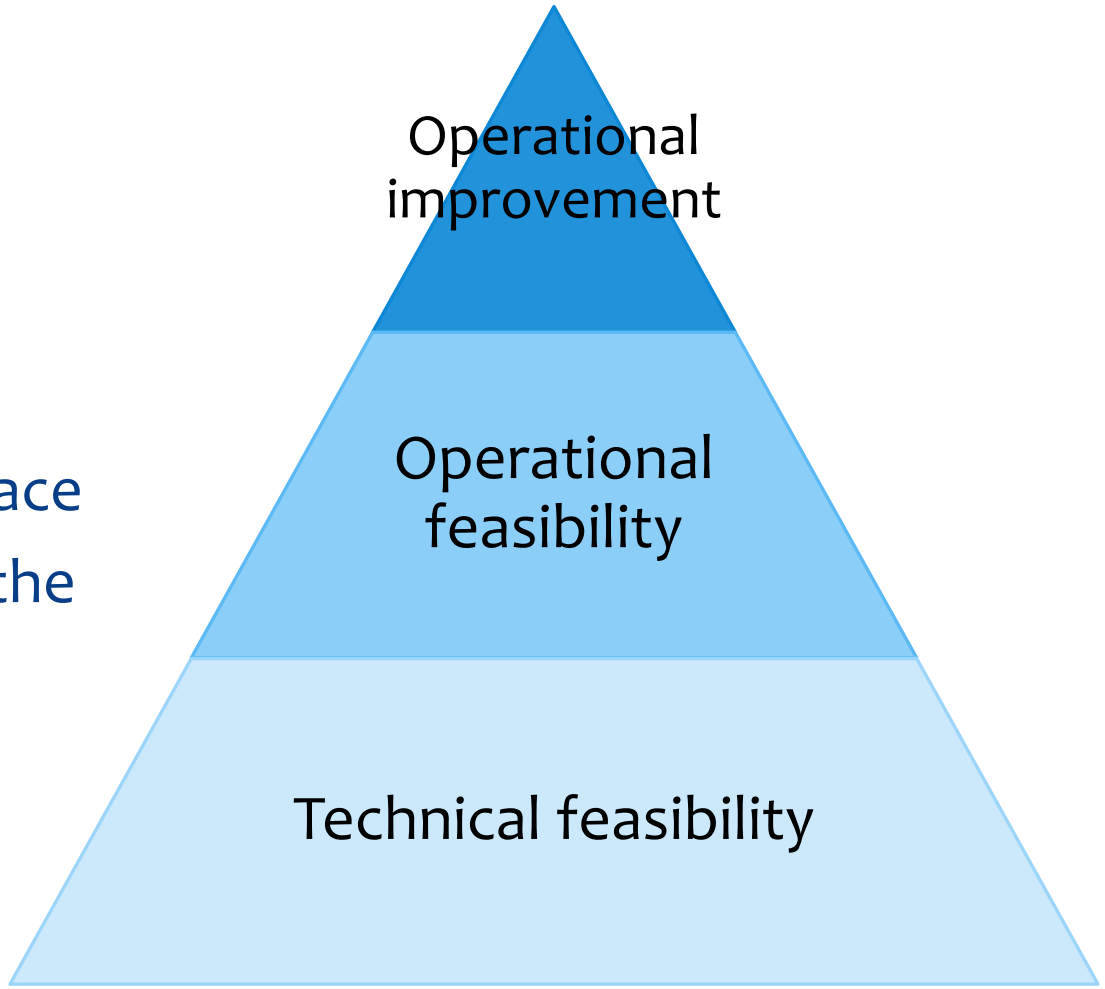
Validation

- Check if WeAC meets requirements
- Human-in-the-Loop Simulation
- Integration of a pre – industrial prototype integrated in the workplace
- Validation is oriented at the E-OCVM v3.0
- DFS METFROG is used as Interface



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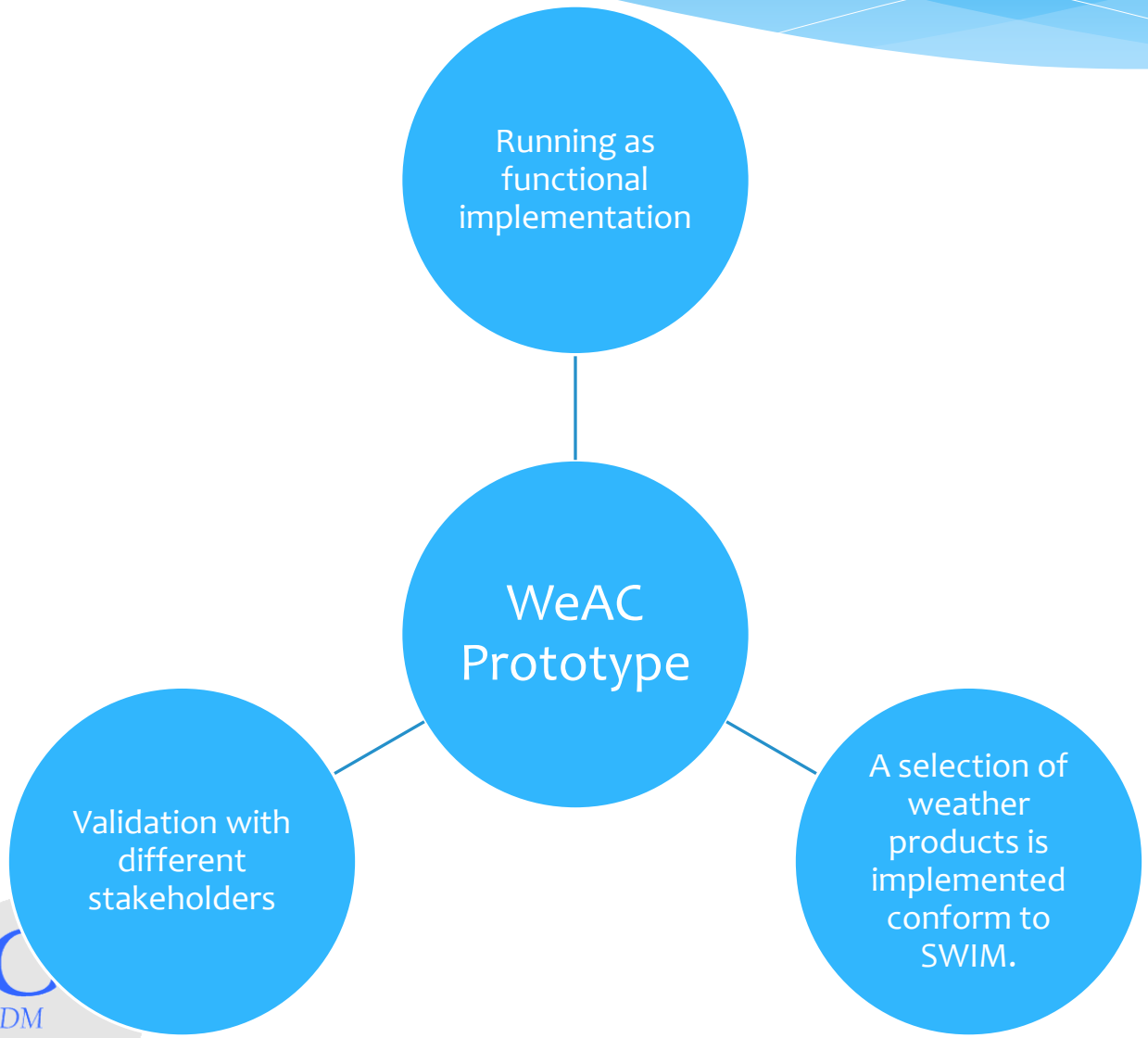
Outcome



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Thank you.

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