

DEMETER-ATLAS webinar 18/06/2020



The DEMETER Reference Architecture



Dr. Ioanna Roussaki

Assist. Professor (National Technical University of Athens, GREECE) Institute of Communications & Computer Systems (ICCS)

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DEMETER Objectives and Assets



Objective 1: Adopt and enhance existing **Information Models** in the agri-food sector easing **data sharing and interoperability** across multiple IoT systems and FMIS and associated technologies

Objective 2: Deliver an **Interoperability Space** for the agri-food domain and using a core set of **open standards** coupled with **security and privacy** protection mechanisms

Objective 3: Empower the **farmer to gain control in the data-food-chain** by identifying a series of new IoT-based, data-driven, business models

Objective 4: Establish a **benchmarking mechanism** for agriculture solutions, targeting end-goals in terms of productivity and sustainability performance

Objective 5: Reverse the relationship with suppliers, where suppliers are responsible for ensuring that a final solution is **optimal** to the farmer's needs

Objective 6: Demonstrate the impact of digital innovations across a variety of sectors and at European level



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DEMETER Reference Architecture concepts



DEMETER Reference Architecture - Approach

- Architecture Design Methodology
 - based on ISO/IEC/IEEE 42010 International Standard
 - Need to identify stakeholders, requirement and architecture viewpoints
- Review of State-of-the-Art Reference Architectures:
 - IoT Reference Models (e.g., IOT-A, AIOTI)
 - Big Data Frameworks (e.g., BDVI, NIST)
 - Interoperability Platforms (e.g., IDSA, FIWARE for Smart Farm App)
 - Sector-specific Reference Architectures (e.g., IIRA, RAMI 4.0, OpenFog)
 - Large Scale Projects Reference Architectures (e.g., IOF2020, DataBio, ...)
- Technical Requirement Analysis
 - Over 30 requirement classes have been identified and over 500 requirements overall, driven by the DEMETER objectives and the stakeholder requirements in the pilots



DEMETER Reference Architecture designed based on the previous





DEMETER Enhanced Entity – Core Enablers









DEMETER Agriculture Information Model (AIM)

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DEMETER Advanced Enablers



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DEMETER Reference Architecture - Instantiation

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www.h2020-demeter.eu

or Email us at :

info@h2020-demeter.eu









Thank you for your attention!



