



TNOVA

NETWORK FUNCTIONS AS-A-SERVICE
OVER VIRTUALISED INFRASTRUCTURES



T-NOVA: Developing a platform for NFaaS

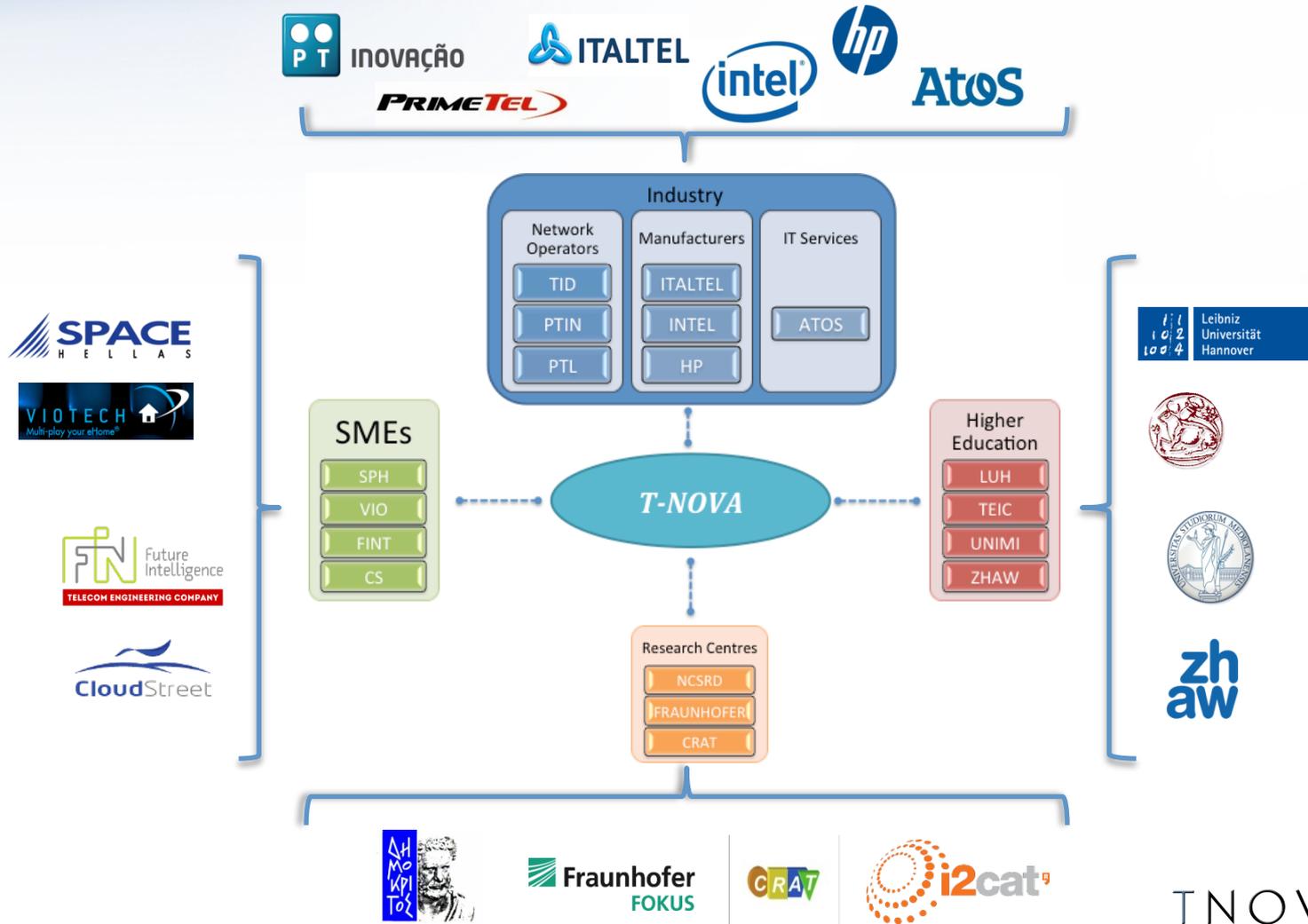
T-NOVA Consortium

Presenter: Kourtis Akis - NCSR Demokritos, Greece

T-NOVA at a glance

- Project title: Network Functions as-a-Service over Virtualised Infrastructures
- Objective FP7/ICT-2013.1.1.: Future Networks
- Project Coordinator: Dr. Anastasios Kourtis (NCSRD)
- Duration: 36 Months
- Starting Date: 1.1.2014
- Budget: € 10,027,115
- EC contribution : € 6,743,000
- Total PM : 1,035.5
- Consortium comprises 18 partners

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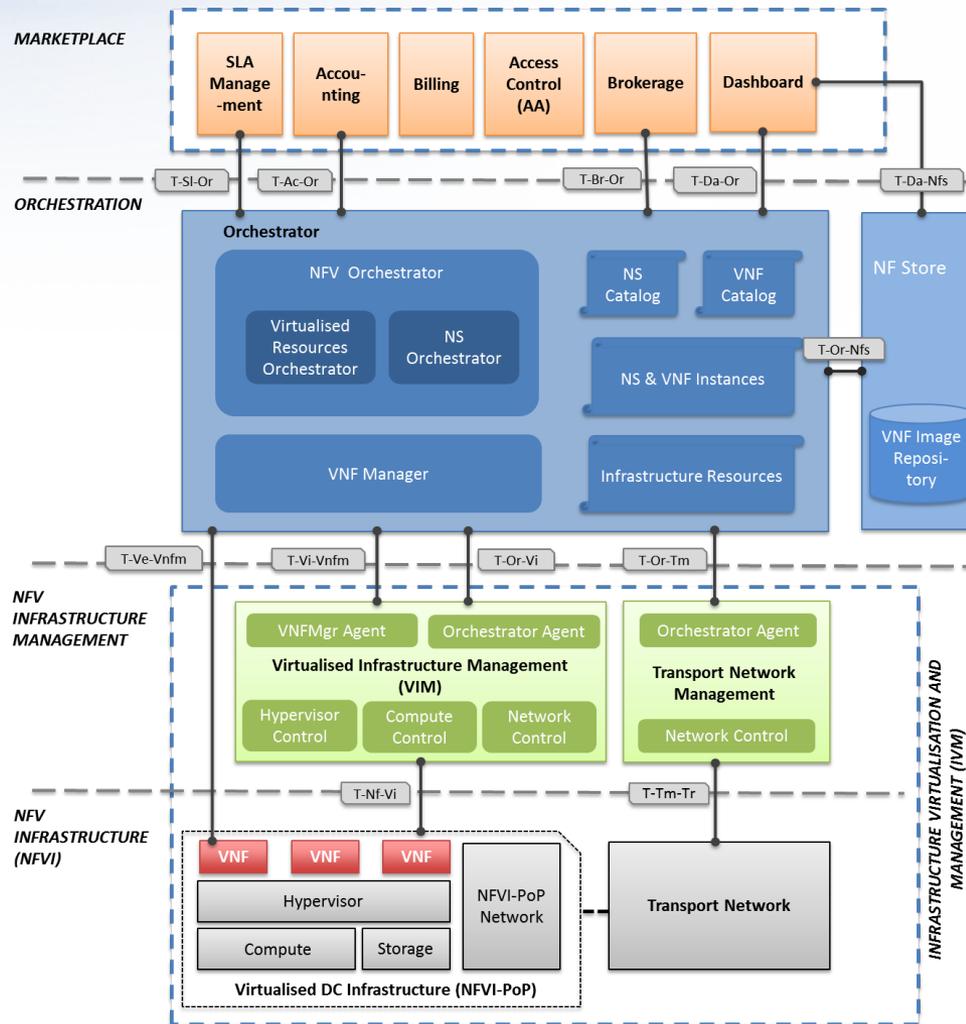
T-NOVA Concept

- **Presents an integrated solution** for the offering, deployment and management of Virtualized Network Functions over composite (Network/IT) infrastructures.
- Implements **Network Function as-a-Service (NFaaS) concept**: offering of Network Functions to operators' customers, as value-added services. (ETSI NFV ISG Use Case #2)
 - Implements an Integrated Management architecture, including an Orchestrator Platform
 - Leverages Cloud computing management
 - Exploits and extends SDN aspects, focusing on the OpenFlow standard, for efficient management of network resources
- **The NFaaS service offered by T-NOVA comprises**:
 - A connectivity Service: transport network links interconnecting NFVI-PoPs also including the per-case establishment of vNETs
 - A set of associated Network Functions, ranging from flow handling and control mechanisms to in-network packet payload processing, according to customer needs

Overall Architecture

- Follows the ETSI architectural concepts and terminology
- Separates VIM and Orchestration layers
 - VIM and NFVI based on Openstack/OpenDaylight
- Introduces a **Network Function Store**, following the paradigm of already successful OS-specific “App Stores”
- Introduces and promotes a **Marketplace** layer for NFV, introducing new business cases and considerably expanding market opportunities by attracting new entrants to the networking market
 - Including a **Novel Brokerage Platform**, allowing customers to transact with the T-NOVA Service Provider and multiple third-party Function Developers

Overall Architecture



Marketplace

Realization of a NFV marketplace focusing on NFaaS in order to:

- allow network services and functions by a variety of developers to be published and brokered/traded
- Allow customers to browse the marketplace and select the services and virtual appliances that best match their needs, as well negotiating the associated SLAs and billing models

Key feature of the MarketPlace is the ability to negotiate and acquire SLAs

Main Marketplace Functions :

- *Publication of resources and NF advertisement*
- *VNF discovery, resource trading and service matching*
- *Customer-side monitoring and configuration of the offered services and functions*

Project Challenges

Most of the generic NFV challenges also apply to T-NOVA:

- **Resource optimisation**
- **Resilience/availability**
- **Compatibility**
- **Performance**

Plus some more focused challenges:

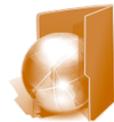
- NFV services **composition** and **packaging** (dynamic/static)
- **SLA templates** and **SLA monitoring** for NFV services
- **Monitoring scalability** and **metrics aggregation**
- Service **up/down scaling** on the fly
- **Enhanced Platform Awareness** for NFV (taking advantage of NFVI hardware accelerators) and smart placement

Thank you!

Questions ?



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