



Towards Automated Interactions between the Internet  
and the Carrier-Grade Management Ecosystems

ONE Project

[www.ict-one.eu](http://www.ict-one.eu)

Admela JUKAN

Concertation meeting, Brussels

Oct 18-20, 2010



Grant agreement No. 258300



## ONE Overview

- ❑ Instrument: Collaborative Project STREP FP7-ICT-2009-5
- ❑ Activity: ICT-2009.1.1 The Network of the Future
- ❑ Grant agreement for: Project duration of 36 months
- ❑ Project start date: Sept 1, 2010
- ❑ Project budget: 3,291,374.00 € (2,229,125.00 € EC contribution)
- ❑ Project resources: 355 PM

Telecom Operator

- Telefonica I+D (ES)

Vendor

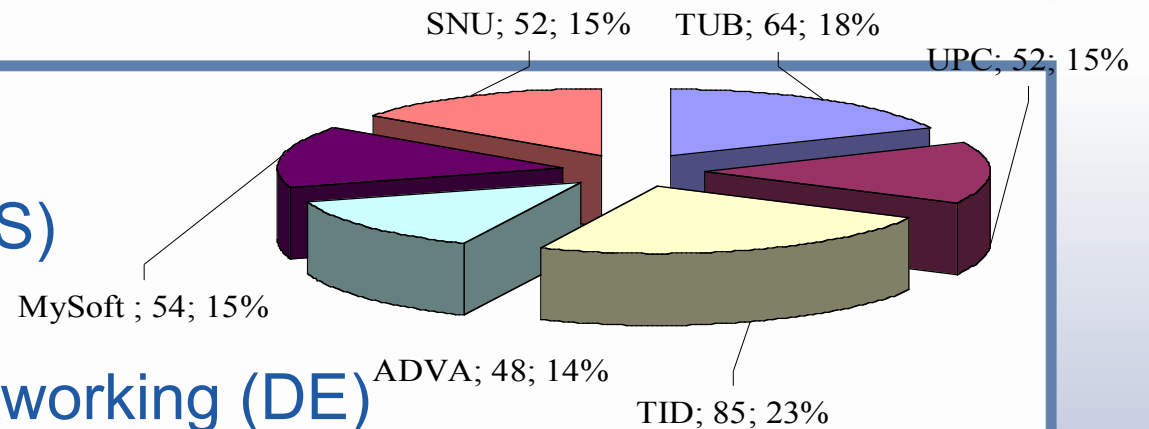
- ADVA Optical Networking (DE)

Software developer (SME)

- MY SOFT (RO)

Universities

- (coordinator) Technische Universität Carolo-Wilhelmina zu Braunschweig (DE)
- Universitat Politècnica de Catalunya (SP)
- Seoul National University (South Korea)





# Background: ONE in the middle

*Cutting Edge Research:*

Automated Provisioning

Open IP Routers  
SDNs

Future Internet

Flexible multi-layer interactions

Dynamic Optical  
Circuits

Green Networks



Manual Provisioning of

Network Stability

Failure Recovery

*Reality:* IP services

Non-standardized  
middleware systems

Flexible transport  
networks (100 GE)

Limited Automation

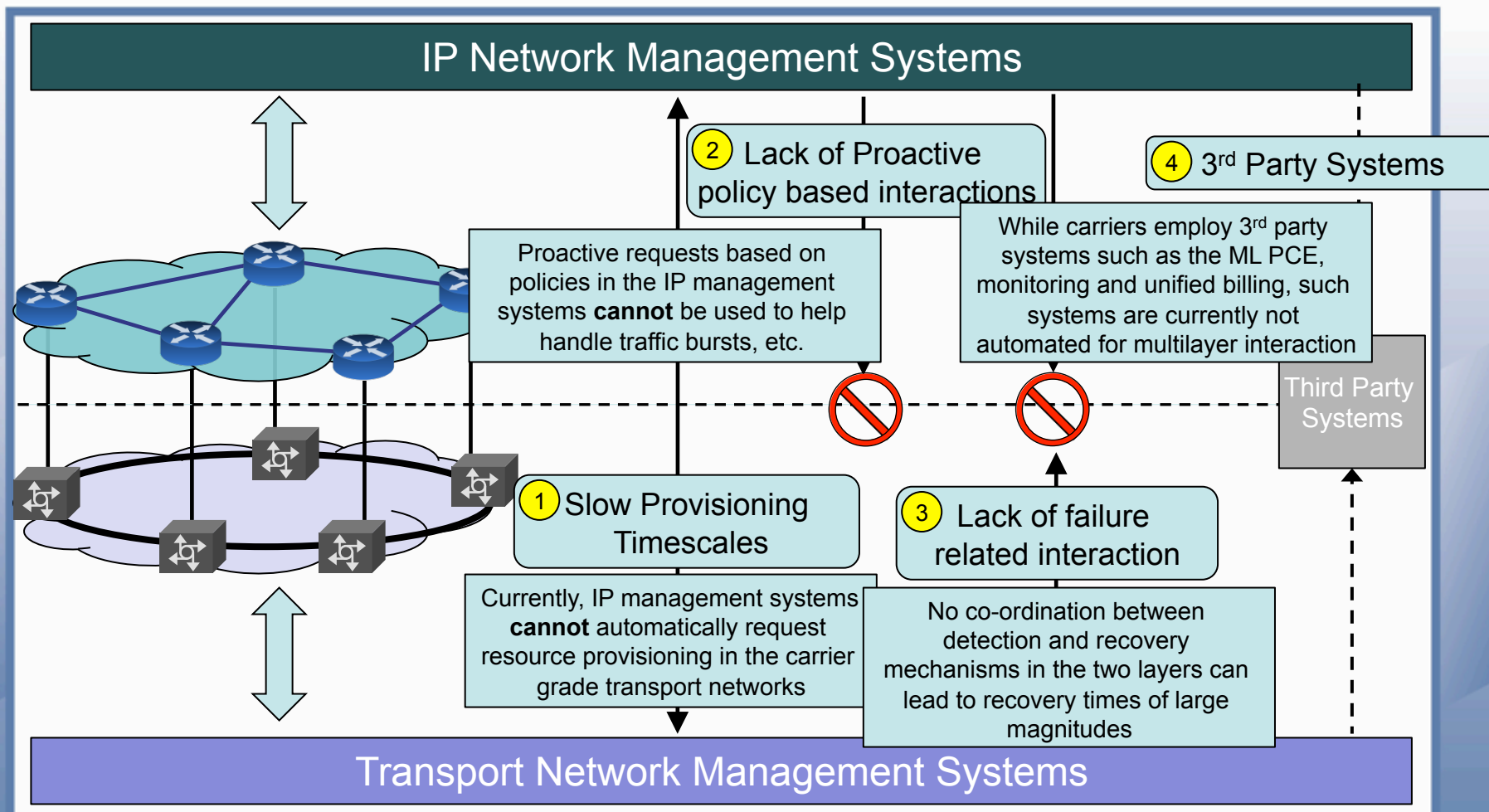


## ONE Objectives

- ❑ Study and assess limitations on cross-layer interactions between the L3 Internet and L2/L1 Transport Management Subsystems
- ❑ Design the ONE management adapter to facilitate three primary cross-layer operations for coordination of the two networks, including *Automated Provisioning*, *Policy Driven Functions* and *Cross-layer Failure Recovery*
- ❑ >50% of total ONE effort is on prototyping and validation
  - Develop and implement the ONE management adapter
  - Validate over test-beds developed by industrial partners

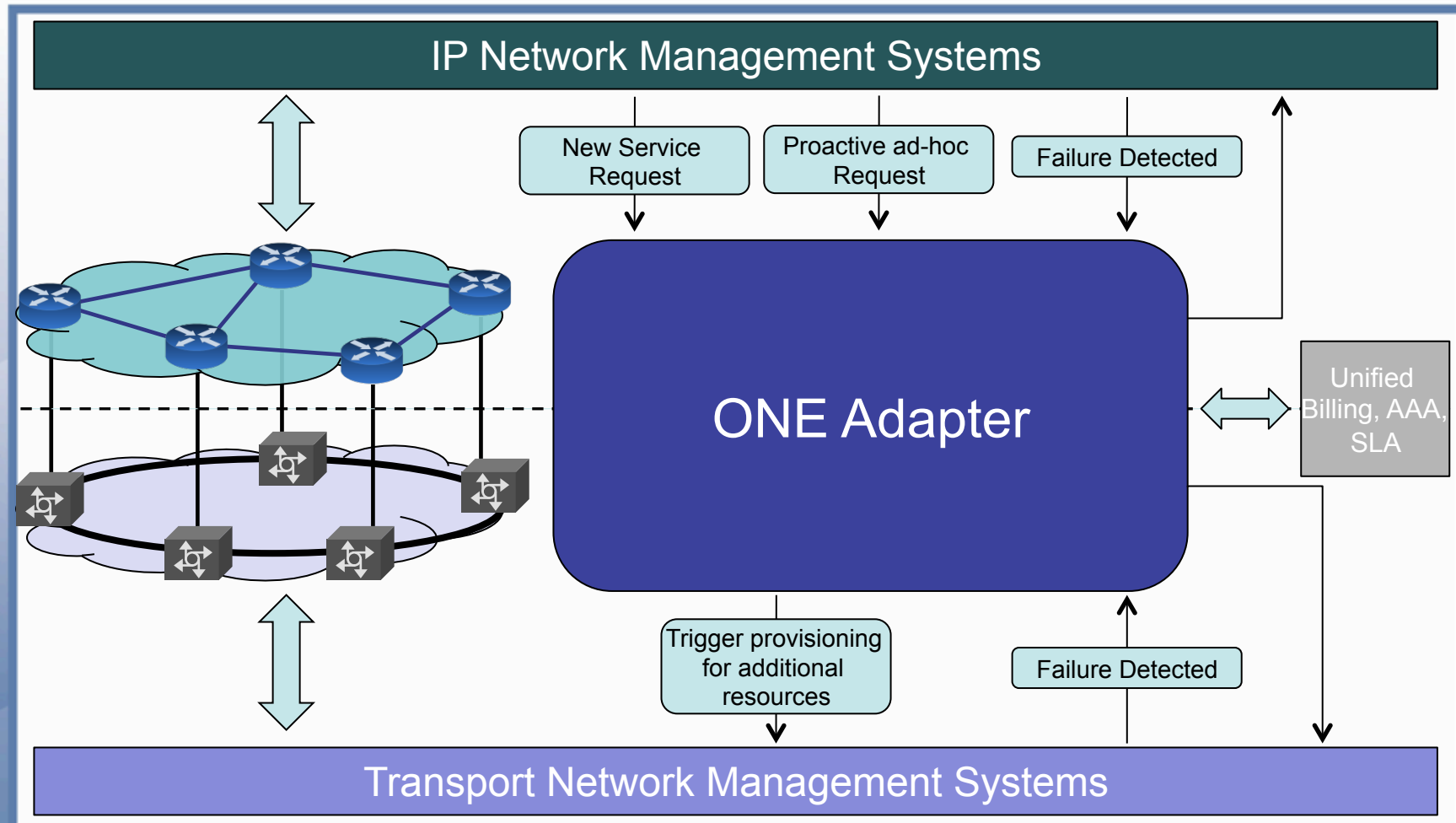


# “IP-over-WDM” Scenario Today



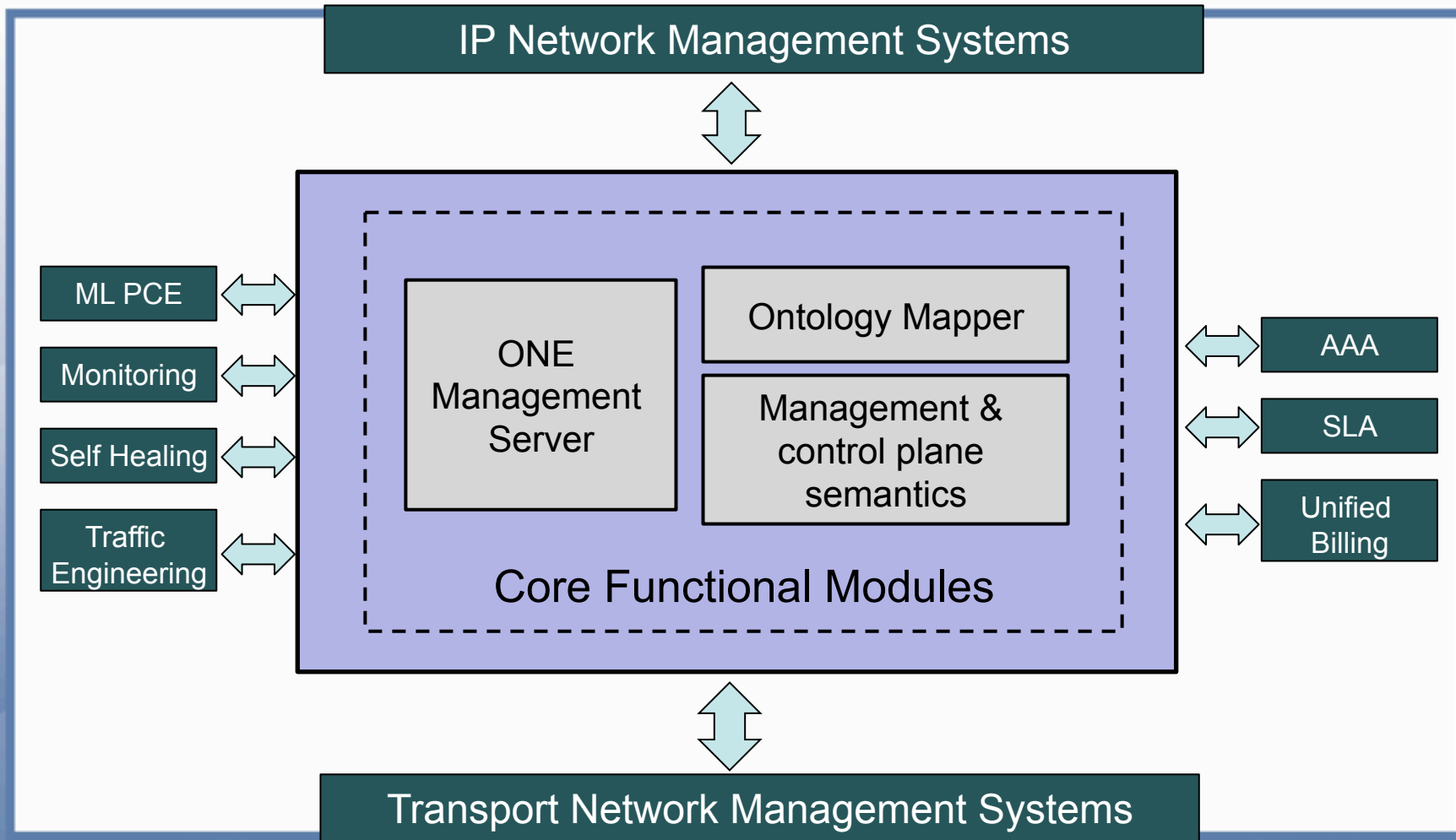


# Future Internet with ONE





# Preliminary Design





## Expected Impact

### Impact on operators

- Network planning with cross-layer services, automated cross-layer operation and management, new business strategies, costs models and services.

### Impact on vendors

- Faster time to market with ease of cross-layer interoperability
- Ease of integration with third party sub-systems

### Scientific impact

- Evolutionary integration of packet-switched and circuit-switched services
- Discover the applicability of new cross-layer paradigms under the limitations of commercial networks

### Impact on standards

- IEEE, TMF, IETF, Broadband Forum



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