



Horizon 2020
European Union Funding
for Research & Innovation



Measuring Mobile Broadband Networks in Europe

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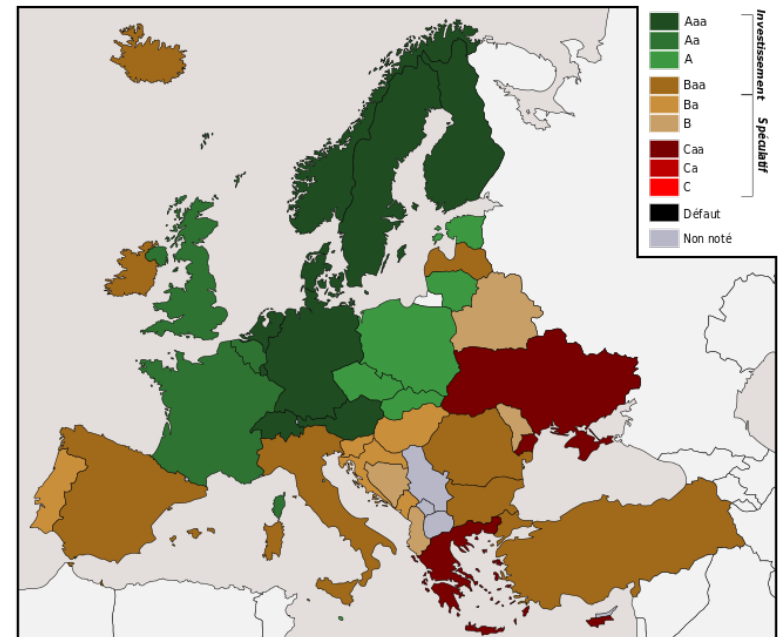
Simula Research Laboratory

@ RAIM2015

*Partners: Simula(coordinator), Celerway(Norway),
Telenor(Norway), IMDEA (Spain), KaU(Sweden), NET1(Sweden),
POLITO(Italy), Nextworks(Italy)*

MONROE: a unique platform for measurements and experiments in operational MBB networks

- Design, build and operate an *open, European-scale, and flexible platform* to run experiments on operational 3G/4G Mobile Broadband networks with WiFi connectivity
- Use the platform for:
 - identification of key MBB performance parameters, thus enabling **accurate, realistic, persistent** and **meaningful** monitoring and performance assessment
 - examination and evaluation of **innovative protocols and services** for MBB networks



Moody's

Notation financière à long terme des États européens

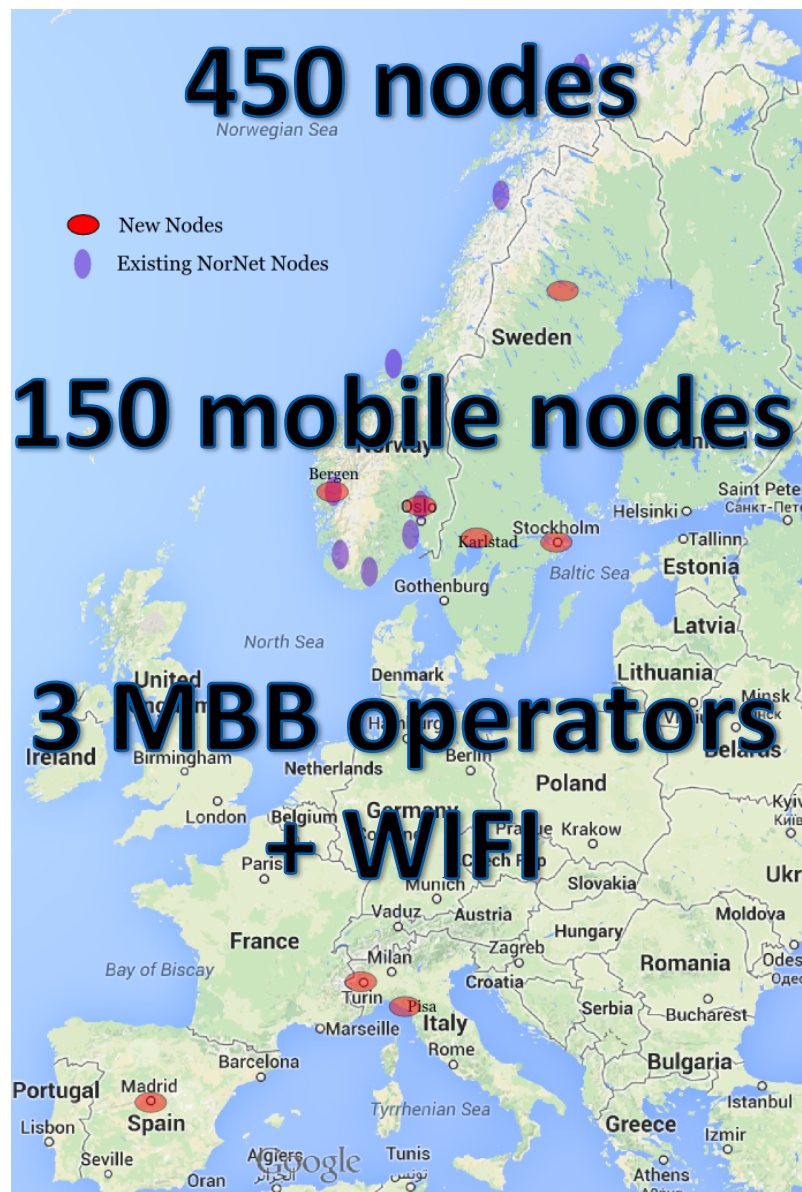
18/01/2014

Source : Moody's (<http://www.moody.com/>)

MONROE: The Moody's of MBB, offering objective data on providers' performance
Price, bandwidth, reliability and application performance

Capabilities and Functionality of MONROE

- Measurement nodes are linux based devices:
 - Allow kernel modifications
 - Support different demanding applications
- Nodes on buses, trains and trucks
 - Analyze the impact of mobility
 - Rural vs City
- 3 MBB operators and WiFi
 - 4 countries: NO, ES, IT, SE
 - Experimenting on different access technologies
 - Explore new ways of combining them for performance and robustness





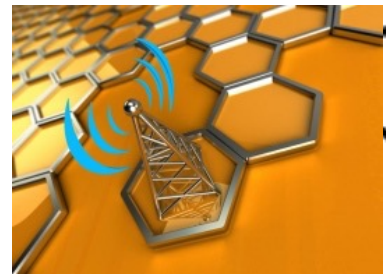
Subscribers



External Users

WANTED!

- *Open Call: Dec. 2015*
- *Up to 150,000€ funding*
- *Enable experiments*
- *Encourage extensions to the testbed (HW and SW)*



Operators

- We incorporate **external users** early on in the system design process
- Enable Experiments as a Service (EaaS)
- External users can deploy their own experiments

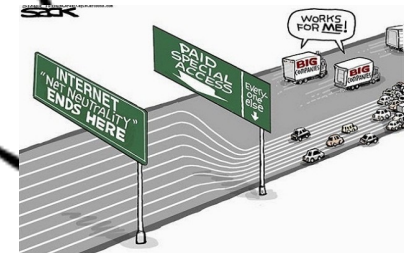


Businesses

Researchers



Regulators



More information, questions and
open calls information:



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<https://www.monroe-project.eu/>

Open Calls:

[https://www.monroe-project.eu/
opencalls/](https://www.monroe-project.eu/opencalls/)

Current MONROE Status and Timeline

- Started March 1st 2015 (will run 3 years)
- Have completed
 - System design and proof-of-concept implementation
 - HW selection
- Currently working on
 - Prototype to be ready in March 2016
 - Deployment of the nodes to be ready in June 2016
- Testbed open to external users in June 2016