



Horizon 2020  
European Union Funding  
for Research & Innovation



# Measuring Mobile Broadband Networks in Europe

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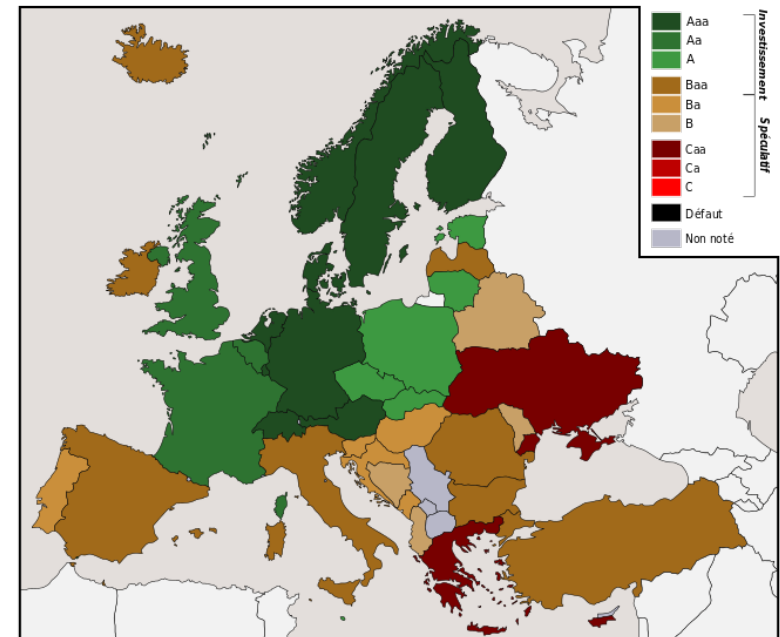
***Simula Research Laboratory***

***@ 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

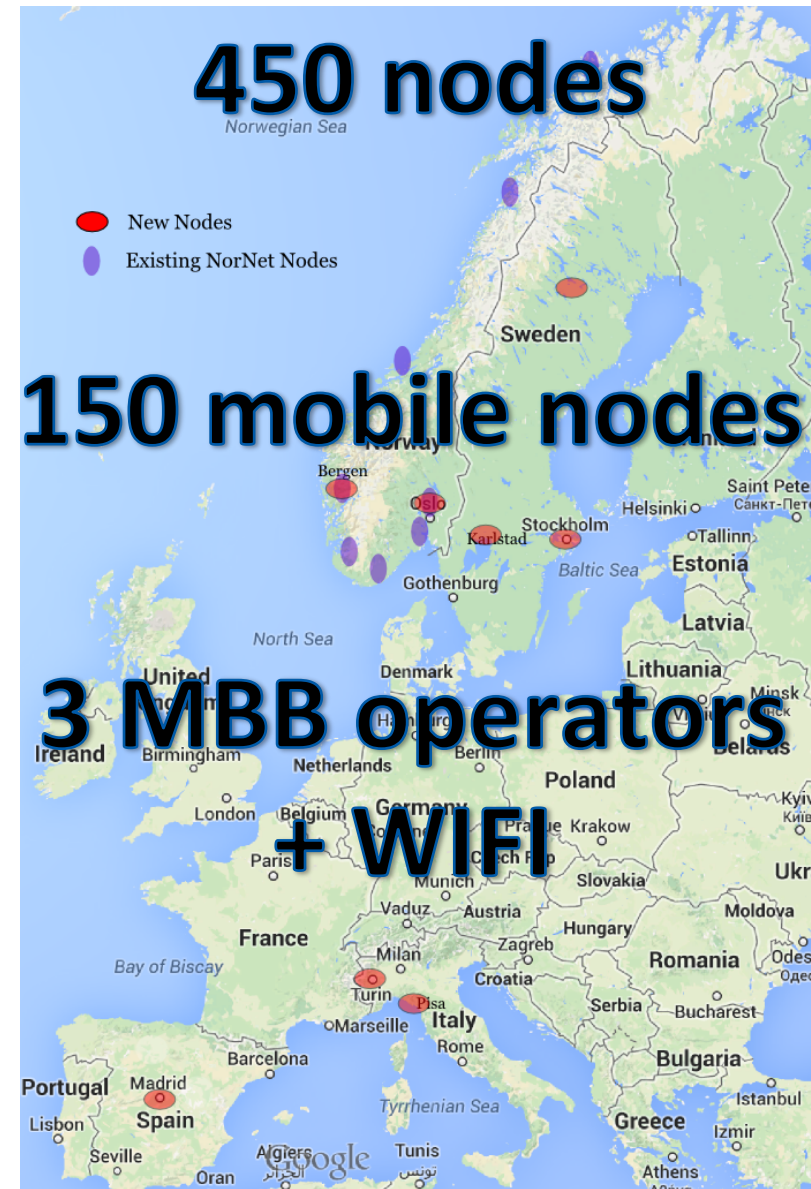
18/01/2014

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
- 3MBB operators and WiFi
  - 4 countries: NO, ES, IT, SE
  - Experimenting on different access technologies
  - Explore new ways of combining them for performance and robustness



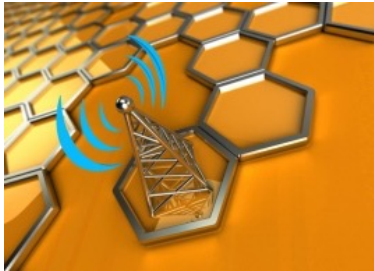


## Subscribers



# 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

