Mobile Broadband Measurement Platform

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MONROE

- Platform for measurements and experiments in operational MBB networks

- Builds on NorNet Edge infrastructure (200 nodes)

- Coverage in Norway, Sweden, Spain, Italy

  - Comparison of different configurations, regulations, frequencies and operator strategies

450 nodes

● New Nodes
● Existing NorNet Nodes

MONROE

- Stationary and mobile nodes

- Nodes on buses, trucks and trains
  - Impact of mobility
  - Rural vs City

- 3MBB operators and WiFi
  - Experimenting on different access technologies
  - Explore new ways of combining them

450 nodes

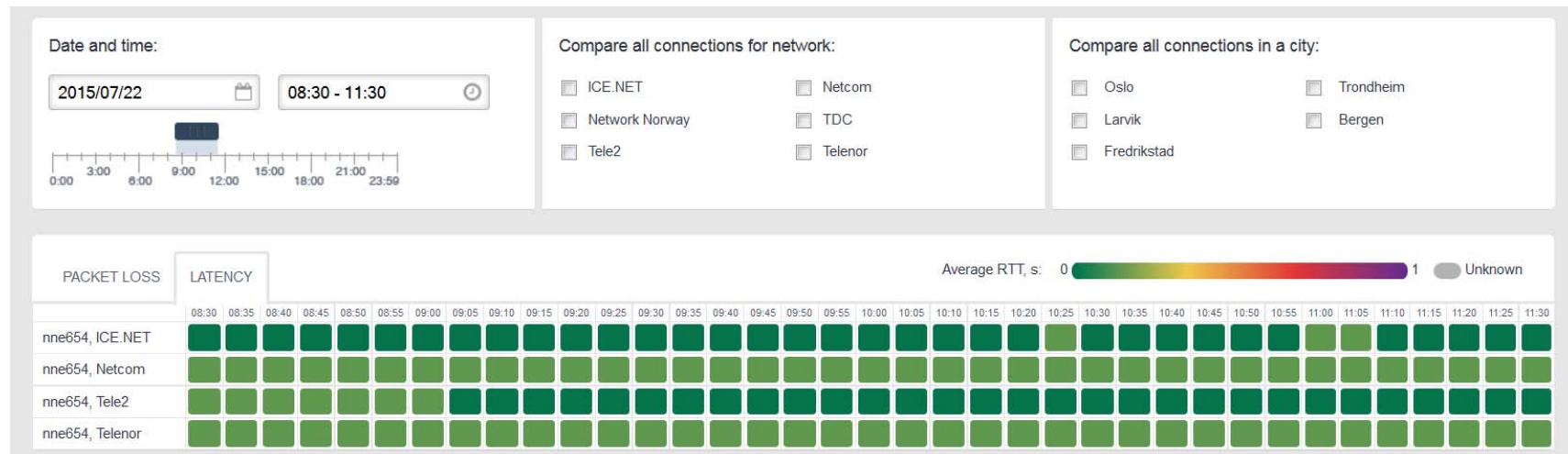**150 mobile nodes**

3 MBB operators + WIFI

Multiple types of experiments

- Innovative protocols and services
  - Evaluation of path support for ECN, TCP Fast Open, MPTCP etc.
  - Performance evaluations

- Evaluation of Key MBB Parameters
  - Latency, packet loss, bandwidth, path dynamics, etc.

- Evaluation of Application Performance
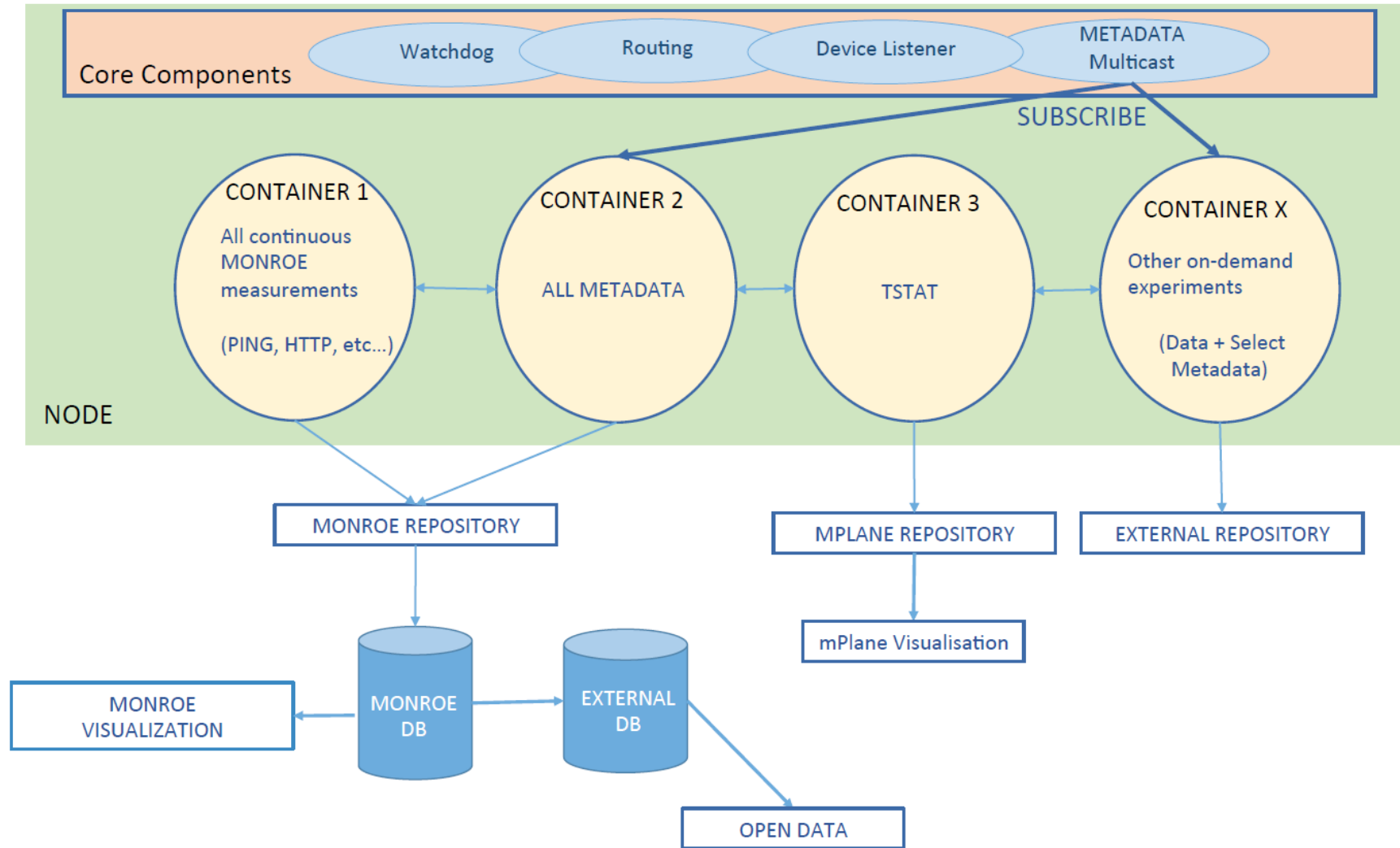 - VoIP, web, video, etc.

Visualization

- Key MBB Parameters
- Could also include middlebox related information, e.g. ECN support

System Architecture

External Users and Open Data

- The MONROE platform will be open to external users
  - open call for funded external experiments as part of development and evaluation of platform

- All components of the system design developed will be released as open source software
  - allows additional nodes to be deployed

- Gathered key MBB parameters will be made available as open data

Outlook and Conclusions

- Status
  - Design and proof-of-concept implementation ongoing
  - Prototype implementation ready March 2016
    - Available to select external users
  - Testbed open to all users in March 2017
    - Enhanced user support (Experiments as a Service)
- MONROE a resource for HOPS measurements
- Happy to receive feedback