Quarterly Status Report

Control, Measurement, and Resource Management Framework for Heterogeneous and Mobile Wireless Testbeds

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Major Accomplishments

No milestones or deliverables were planned in this first quarter.

Activities and Findings

Work to date has focused on the following deliverables.

Providing L2 connectivity to ORBIT

We worked with the NJEdge regional consortium to connect us to MAGPI East (Philadelphia). As part of this process, we acquired dedicated fiber along the Route 1 corridor jointly with NJEdge. We already own the fiber between WINLAB/ORBIT and the Food Science building on Rutgers Cook Campus. Rutgers is now in the process of installing the missing link between the Food Science building and the Route 1 corridor (~1 mile). Current estimated completion of this link is by Mar 1.

In the meantime, we have obtained rights to use the excess capacity of 400Mbps on Rutgers University's existing commodity feed to I2. We can use this connection for testing purposes until fiber connectivity is in place.

Extending OMF to support multiple heterogeneous testbeds

Towards this goal, we have so far completed the following tasks: migration of all domain specific configuration parameters to the Inventory database for that domain, early deployment tests on different PC-based hardware. Furthermore, we are currently working on the following tasks:

-modification of OMF communication to follow publish-subscribe paradigm,

- preparation of OMF code for an interim release with installation guide documents,

- overall review and modification of source code to make OMF more robust to unexpected events, such as out-of-sequence messages between OMF entities.

Supporting mobile nodes: local OMF caching and distributing experiment scripts

We have refactored our measurement framework (OML v2) to more easily add temporary caching of collected measurement on disconnected nodes, and automatic data retrieval upon reconnection. The refactoring and testing of all prior features has been completed. The local caching feature is currently under development.

Project Participants

Marco Gruteser

Max Ott

Thierry Rakotoarivelo

Ivan Seskar

Joe Miklojcik

Publications

None to report.

Collaborations

Beyond the original project plan, we have also started a collaboration with Brian Levine's team from UMass with the objective of aligning control and measurement interfaces for our mobile testbed. As a first step, we will attempt to run our current software version on the UMass DieselNet testbed. To facilitate this we have ordered and set up the two DieselNet hardware nodes (i.e. "Bricks") in our NICTA lab. We are currently communicating with the DieselNet team and have installed the DieselNet image on these nodes. We are now in the progress of porting OMF to this platform. Once we can successfully run OMF on these DieselNet nodes in our lab, we will attempt to install OMF on the moving DieselNet testbed.

Outreach

None to report.

Other Contributions

We have also conducted a demo (Nov 13) of the current framework to members of the GPO.