OMNeT++ Community Summit 2016, Brno University of Technology (FIT-BUT), Sept 15-16.

An Update on INET Development

Rudolf Hornig

Areas of Work

We are working on:

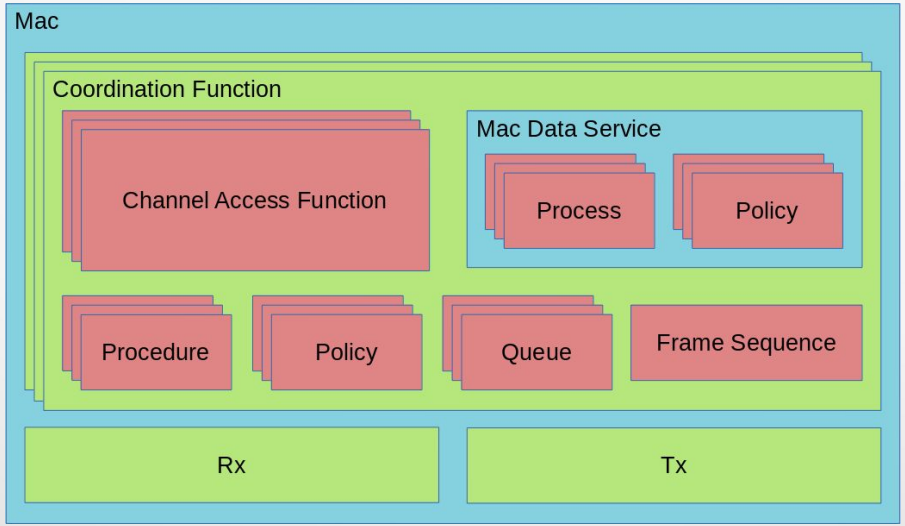
- Framework Infrastructure
- New protocols
- Documentation

Framework Infrastructure Development

- Wireless infrastructure ✔ (in INET 3.2)
- Visualization (2D/3D) ✔ (in INET 3.4)
- StandardHost restructuring ✔ (unreleased - to appear in INET 4.0)
- Cross-layer communication (packet tags) ↻ (in progress)
- Flat packets ⏰ (planned)
- Mobility refactoring ⏰ (planned)

New Protocols

- IEEE 802.11 MAC
  - Full-blown, modular and extensible MAC, supporting experimentation
  - Status: in progress, see separate presentation: *An outline of the new IEEE 802.11 model in the INET framework*



Documentation

We are working on two kind of documents:

- Tutorials
- Showcase simulation examples

The INET Manual is put on hold. Why?

- A comprehensive manual would take too much effort
- Tutorials are a more effective way to convey knowledge in specific areas

Tutorials

- Wireless Tutorial ✔ (released in INET 3.4 and online)
- **IoT Tutorial** ⏰ (planned) 👤 (*help needed!*)
- **Sensor Networks Tutorial** ⏰ (planned) 👤 (*help needed!*)
- Advanced Wireless Tutorial ⏰ (planned)
- Visualization Tutorial ⏰ (planned)
- WiFi Tutorial ⏰ (planned)
- Routing Tutorial ⏰ (planned) 👤 (*help needed!*)
- IPv4Configurator Tutorial ⏰ (planned)
- Energy Management Tutorial ⏰ (planned) 👤 (*help needed!*)
- Ideas?

Showcase Examples: What Are They?

Current example simulations were mostly born as tests for some model or feature, and not designed for educational value…

Showcase examples:

- Contain a clear problem statement
- Simulation model has clear focus, and strives for simplicity
- Documentation complete with:
  - model description
  - expected results
  - explanation of what happened
  - result analysis
- Reasonably self-contained, ready for publishing online

Currently Implemented Showcase Examples

- Wifi Throughput ✔
- Wifi Handover ✔
- Wifi Hidden Node ✔
- Wifi Rate Control ✔
- Wifi Power Consumption ✔
- Wifi Error Rate ✔
- Wireless Radio Level of Detail ✔
- Ideas?

Demo

Showing:

- Wireless Tutorial (https://omnetpp.org/doc/inet/api-current/tutorials/wireless)
- some Showcases

Thank you