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FIRE Position Statement

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Requirements for the testbed

- **We need to test the Publish/Subscribe paradigm and other novel ideas on a reasonably large scale**
- **The testbed has to adapt to a variety of widely different schemes that need not even be based on IP**
- **The testbed has to:**
 - **Enable easy experimentation of minor modifications (evolutionary innovations)**
 - **Allow the implementation of totally new schemes (disruptive innovations)**
 - **Support several independent concurrent tests**
 - **Be cost-efficient and available also for SMMEs**
- **There is no comparable large testbed in Finland but our experimental networks are available as components (e.g. HIIT has a 1 Gbit/s test connection to the FUNET backbone connected at 2.5 Gbit/s to abroad)**

Some thoughts

- **Base the testbed on:**
 - **Inexpensive industry-standard hardware**
 - **Open-source software**
 - **Capacity from existing networks**
- **Virtualize everything:**
 - **Computers/Routers/Switches/Gateways**
 - **Links**
- **Instead of starting from the scratch, build on an existing software platform (such as XORP)**
- **Make the testbed simple, flexible, robust and cost-efficient**
- **Cover the whole chain from basic research to deployment**
- **Provide secure management of each virtual testbed through the use of secure protocols (SSH, SSL etc.) and PKI**