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Large-scale RINA Benchmark on FIRE

ArcFIRE brings RINA (Recursive InterNetwork Architecture) from the labs into the real-world. RINA is an innovative “back-to-basics” architecture that facilitates full integration between distributed computing and networking. RINA addresses the challenges that drive the move from specialised hardware to almost completely virtualized infrastructure. The next paradigm shift, towards 5G, makes it now the right time for ArcFIRE to provide experimental evidence of RINA’s benefits, at large scale, in compelling and realistic business cases.

How does it work?

The project facilitates the comparison of converged operator networks by applying RINA to operator’s current state of the art network designs. ArcFIRE will produce a robust RINA software suite ready for Europe to engage in large-scale deployments and long-living experiments; and use it internally to provide experimental evidence of RINA’s benefits to network operators, their equipment vendors, application developers and end-users. Open Source software and high quality results published in high impact journals will help ArcFIRE to raise the number of organisations engaged. The work done in ArcFIRE will enhance the FIRE+ infrastructure with ready-to-use RINA software and documentation on how to setup RINA playgrounds for experimentation.

Key objectives

ArcFIRE will lay out the design of RINA converged operator networks; specifying the types and scope of the layers in the network, different policy choices and

optimized network management strategies. Key to the project’s success is the adaptation, enhancement and robustification of a RINA software suite – leveraging the results of previous FP7 projects. The last goal of ArcFIRE is to perform large-scale experimentation with the RINA software suite on FIRE+ facilities – exploiting the extensive catalogue of FI experimental facilities available in FIRE. Experiments will focus on the management of multi-layer networks, provisioning of reliable services over heterogeneous physical media, end-to-end service provisioning across multiple operators, and effectiveness against DDoS attacks.

How to get involved?

Information on RINA is available at the ArcFIRE and PSOC websites. ArcFIRE is building on the IRATI open source RINA implementation, which is already available on github. PRISTINE has produced a number of reports on setting up and running experimental scenarios.

Project Facts

CALL: Collaborative Projects Call 2 - ICT12 | **EXECUTION:** From January 2016 to December 2017

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