



KIRA – Scalable Zero-Touch Routing for Control Planes

Roland Bless

Institute of Telematics, KIT



KIRA – Motivation

■ Goals

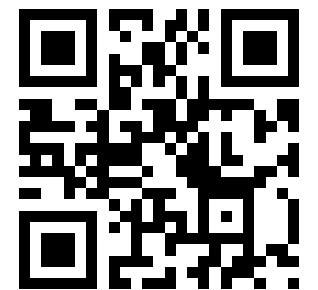
- resilient control plane connectivity → robust network operation
 - e.g., for SDN, NFV, VIM, AI-based Control, Intent-based NM, OAM, ...
 - guarantee controllability of every networked device → IETF standard
- no manual configuration, no dependencies (just link layer connectivity)
- support for inband, out-of-band, hybrid management/control

- Existing solutions not scalable, zero-touch, or topology specific
- KIRA could be an alternative routing protocol for ANIMA's ACP (Autonomous Control Plane)
 - Offering advantages over RPL-ACP
- Offers additional services: topology discovery, DHT (Key/Value Store)

SDN: Software Defined Networking,
NFV: Network Function Virtualization,
VIM: Virtual Infrastructure Management,
NM: Network Management,
OAM: Operations Administration, and Maintenance

Ready for Standardization...

- Internet-Draft <https://datatracker.ietf.org/doc/draft-bless-rtgwg-kira/>
 - Updated to -01: added action descriptions for sending/receiving messages
 - Please provide feedback!
- **Running Code available**
 - Hackathon IETF 121
 - Native Routing Daemon Linux (Rust)
 - Forwarding Tier uses nftables
 - Alternative eBPF implementation underway
- Want IETF expertise
 - WG Draft
- Side meeting **Wednesday Nov 6th, 19.00–20.00h, WMR 4**
 - KIRA Intro, Q&A, collaboration, next steps towards standardization



<https://s.kit.edu/KIRA>