



Remote Vehicle Interaction

October 19, 2016 | Expert Group Update

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Progress Report – Overview

- SOTA and SWM handed over to Network Expert Group
- VSS and VSI handed over to Network Expert Group
- RVI C Library Completed
- PKI Completed
- Provisioning completed
- Big Data Expanded with backend processing

Failure Report – Overview

- GENIVI Compliance process for RVI Core

Progress Report – SOTA / SWM

- SWM picked up by several OEMs and T1s
- Successful OSS -> Commercial transition

Progress Report – VSS / VSI

- 847 signals and counting
- Adopted by W3C and OCF
- Separate session Wednesday 11:00-12:30.

Progress Report – Big Data

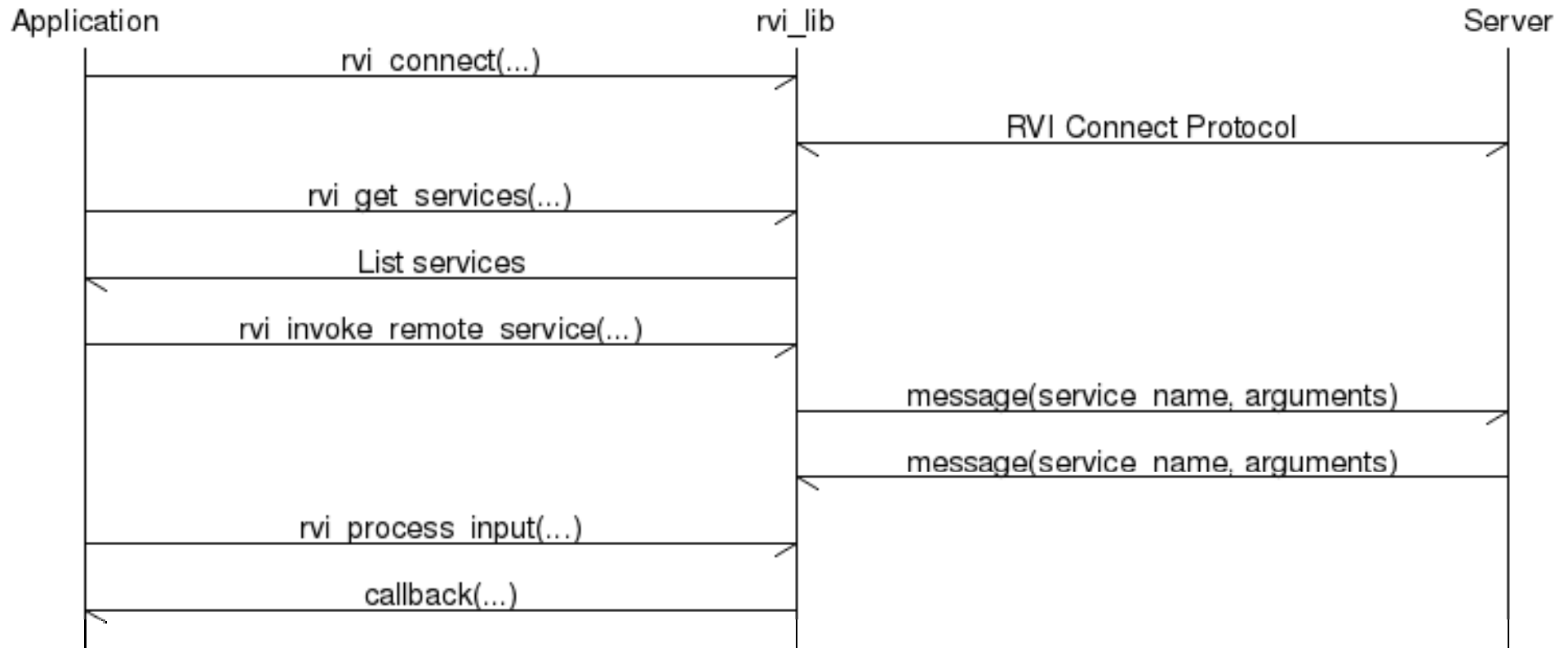
- Collaboration with Hortonworks
- Get the bigger picture through data aggregation
- Separate session Wednesday 14:00 – 15:00

RVI C Library

Tatiana Jamison



C applications plug in to RVI architecture



Simple API for RVI behavior

Context management:

rvi_init(...)
rvi_cleanup(...)

I/O management:

rvi_process_input(...)
rvi_invoke_remote_service(...)

Service management:

rvi_register_service(...)
rvi_unregister_service(...)
rvi_get_services(...)

Connection management:

rvi_connect(...)
rvi_get_connections(...)
rvi_disconnect(...)



RVI keeps dependencies to a minimum

- OpenSSL
 - GENIVI specification
- libJWT
 - C implementation of JavaScript Web Token standard
- Jansson
 - C implementation of JSON standard
- *Future dependency: MessagePack library*



RVI Core – Under the hood

Ulf Wiger



Current RVI Core Priorities

- Security
- Stability/Maintainability
- Usability
- Speed/Scalability

RVI Core Security

- Security Team review ongoing
- Code cleanup
 - Simpler code
 - Remove unsecure transports/ports
 - Explore advanced use cases

Stability/Maintainability

- RVI concepts have stabilized
- Remove debris from previous versions
- Focus hard on readability
- Maintain test suite

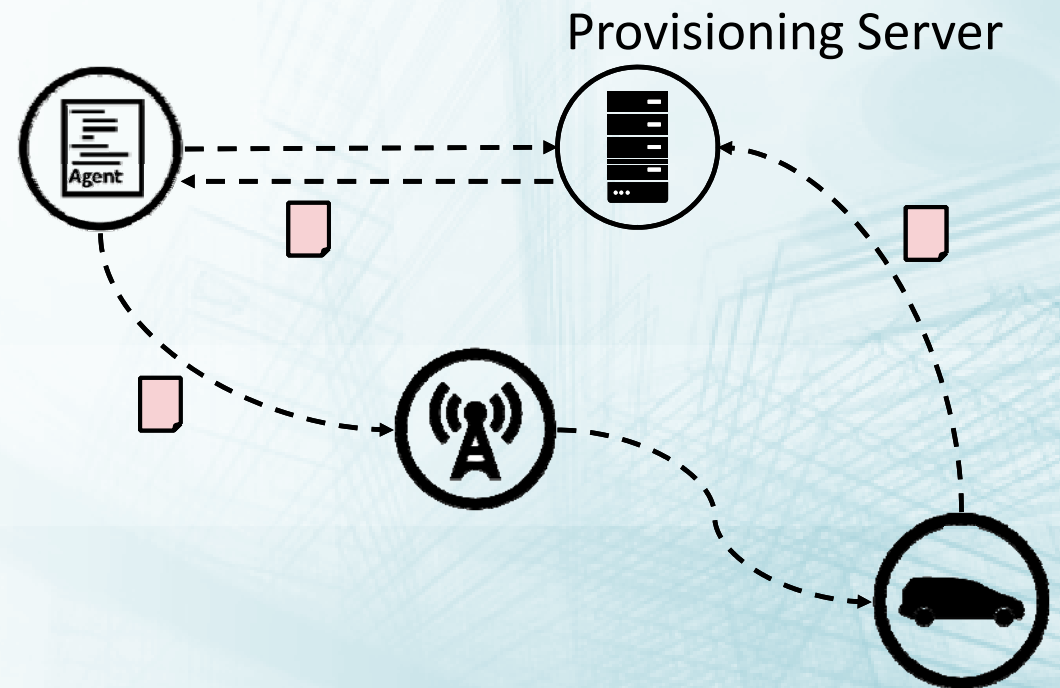
- (rewrite in progress – done in near future)

Usability

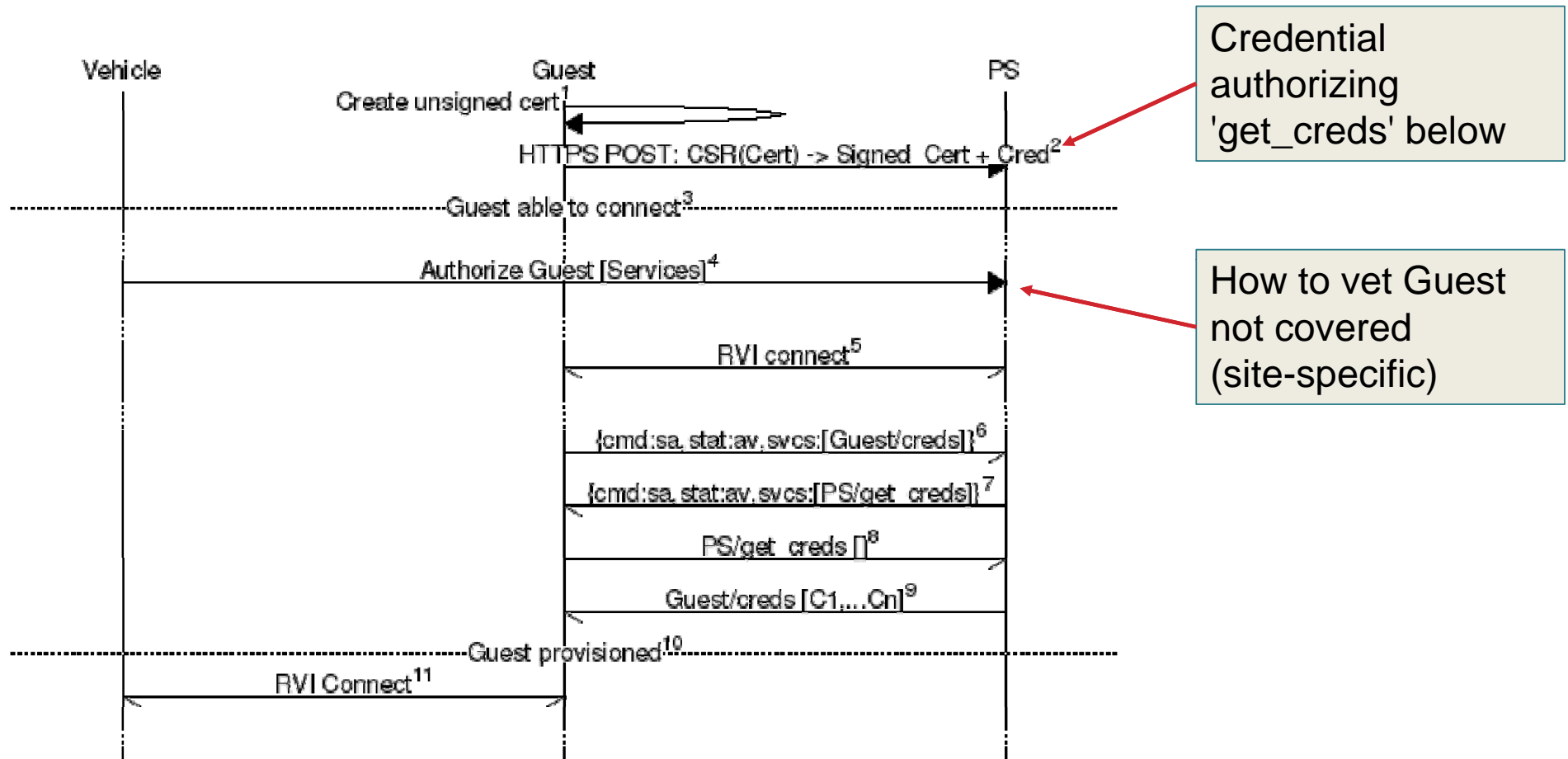
- Support key semantics
 - RPC with immediate failure notification
 - Message order guarantees
 - Dynamic provisioning
 - Advanced use cases (e.g. RVI-provisioned tunnels)

Dynamic Provisioning

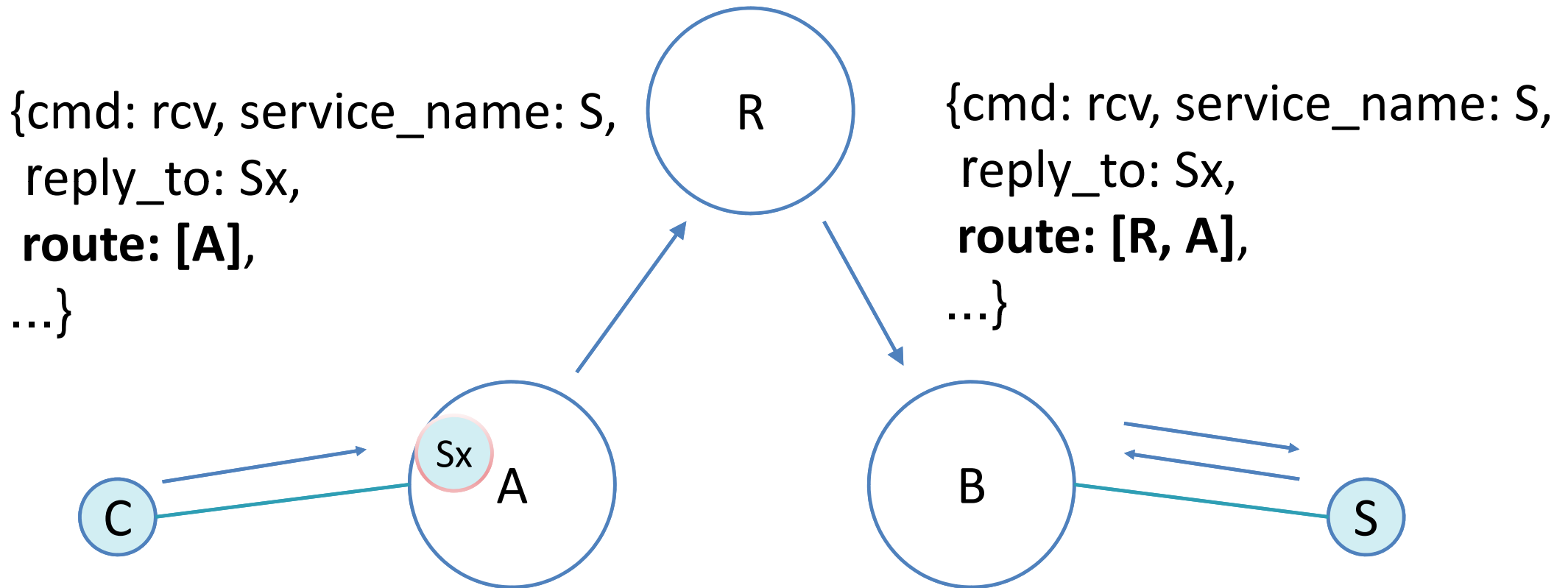
- Core RVI-related actions
- Provisioning Server logic up to each implementor
- Credential exchange uses RVI protocol
- Works with rvi_core 0.5.0



Dynamic Provisioning Sequence

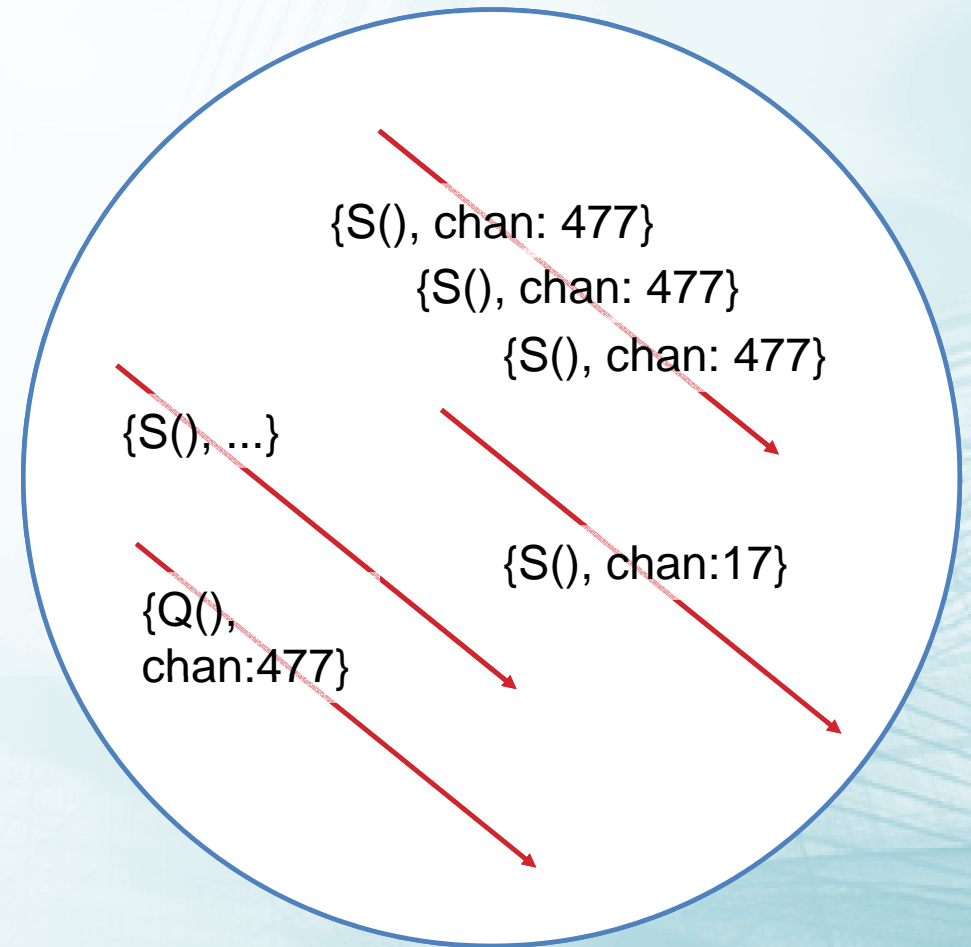


RPC + Service invocation relay

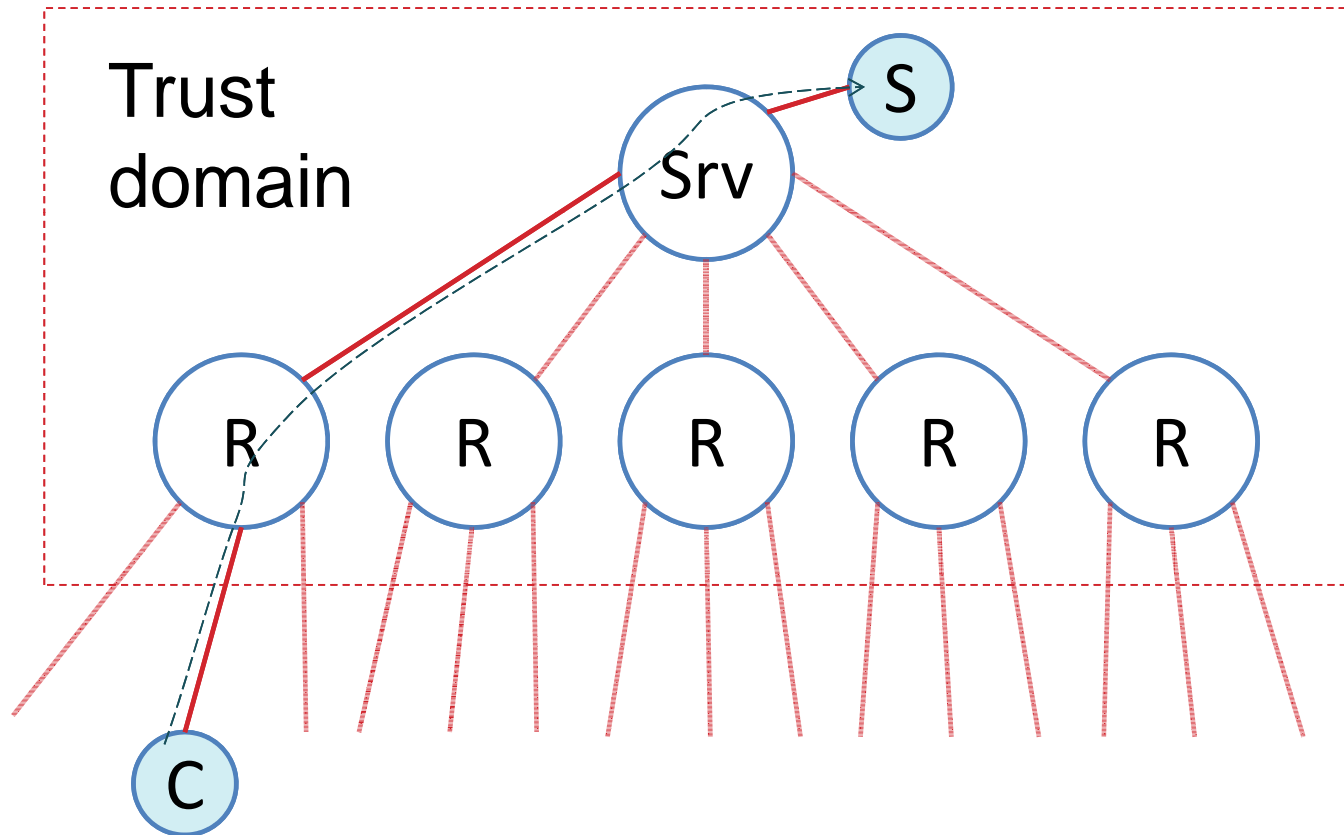


Message Order Guarantee

- "Messages from endpoint A to endpoint B should arrive in the same order as they were sent"
 - If they arrive at all
 - Provided same "chan" attribute
- 'Minimal' ordering
 - Parallelize as much as possible
 - Enforce ordering when needed

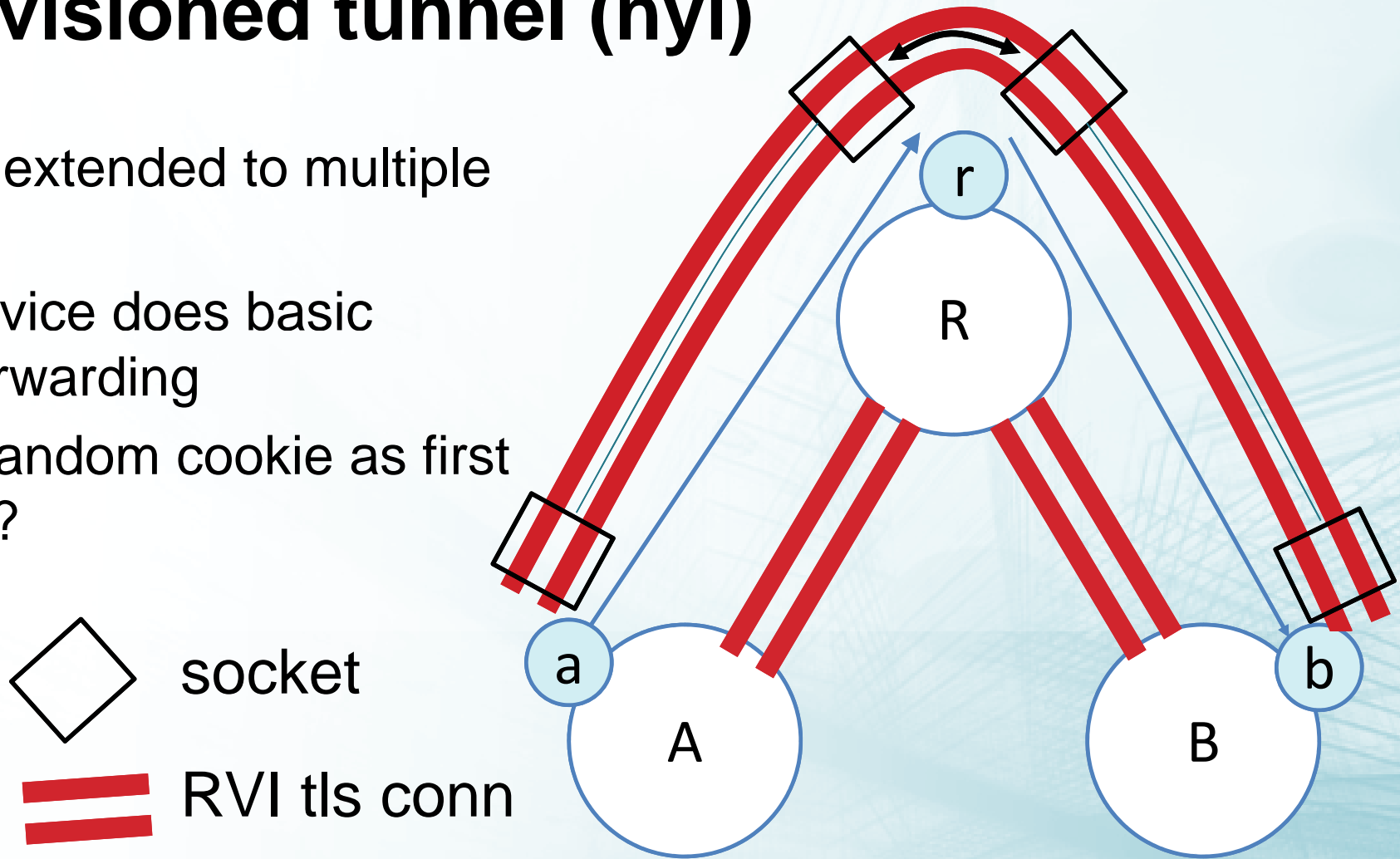


Relay-based connection fan-out



RVI-provisioned tunnel (nyi)

- Could be extended to multiple hops
- Relay service does basic packet forwarding
- Require random cookie as first message?



Thank you!

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Contact us: help@genivi.org

