

A blurred photograph of a modern office hallway with large glass windows and a central revolving door. Several people in business attire are walking through the hallway, their figures out of focus to convey a sense of activity and movement.

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## **New IEEE registration protocol based on link-state (formally presented as MRP++)**

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# Motivation

- Industrial networks are structured networks with separated administration domains
- Each network segment can differently be organized (decentralized or centralized) but communication (best-effort, streams) above network segments must be possible  
→ **NNI / UNI** (e.g. L2<->L2, L2<->L3, Customer<->Provider, ...)
- Multiple differently industrial applications share one network
- Not only static also ad-hoc stream reservation must be supported
- End-devices must be independent from network organization model  
→ **industrial UNI**
- For UNI, NNI and for decentralized / centralized network organization a protocol based stream reservation is required

**To fulfill further requirements like improved protocol performance, higher scalability and supporting new features → need for a new registration mechanism which scales and performs better than current MRP**

## Why a new Link-State-Registration-Protocol (LRP)?

The purpose of MRP is to **synchronize network attributes** along a given tree **peer-to-peer** over the network.

It is **not intended** that the new LRP will **change** this.

### So what will it pay us?

As described in previous presentations, MRP wasn't designed for the amount of data, which is needed by SRP. Especially if we respect what is required to support the new TSN features.

**→ The purpose of the effort around LRP is to solve the scalability and performance issues of the current MRP.**

## Proposed features of new LRP

### Proposed LRP mechanism for performance improvement and better scalability

- Improved peer-to-peer synchronization mechanism by introducing checksum (Checksum PDU)
- Only new information will be transmitted peer-to-peer (differential update → Attribute PDU)
- Support for hold times (like in today's IS-IS LSP)

- To reduce traffic load (less chatty)
- Reducing required computing power

- Support for fragmentation

- Improved scalability for LRP applications

# Thank you for your attention!

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