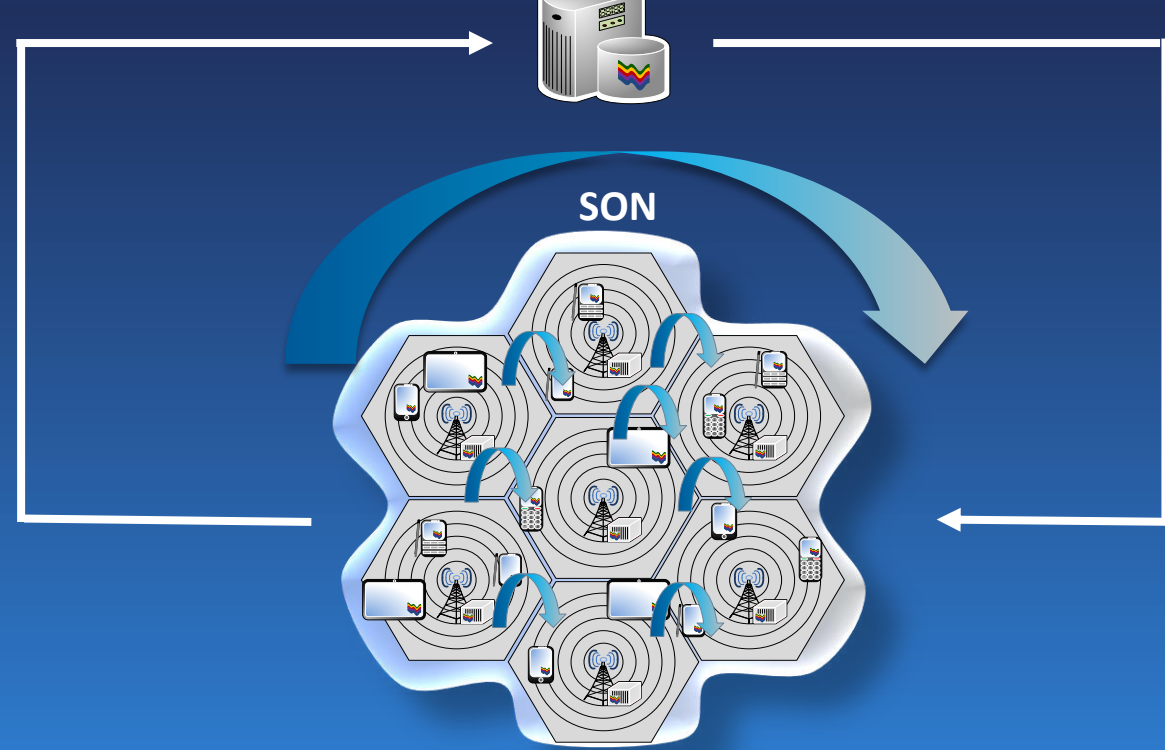
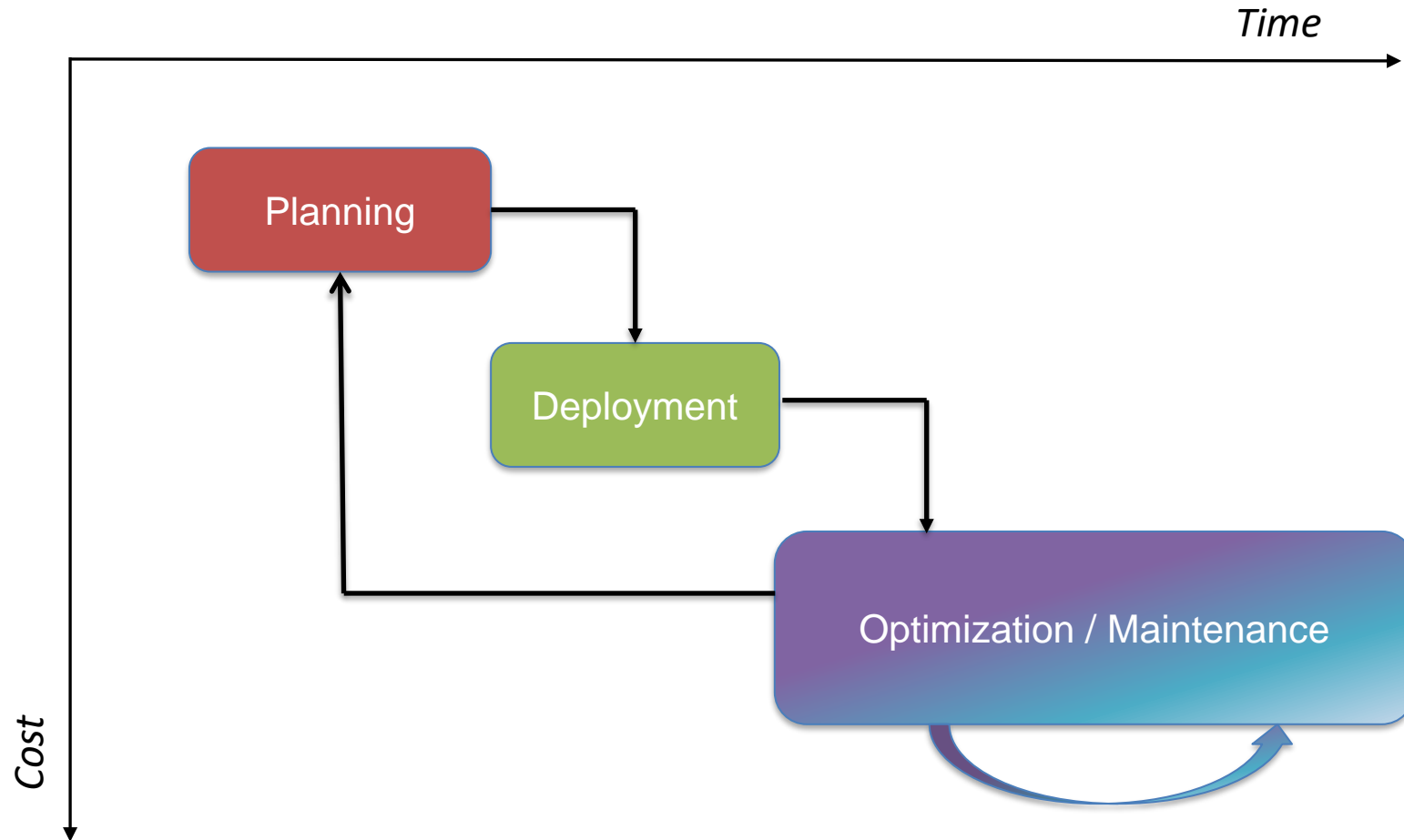


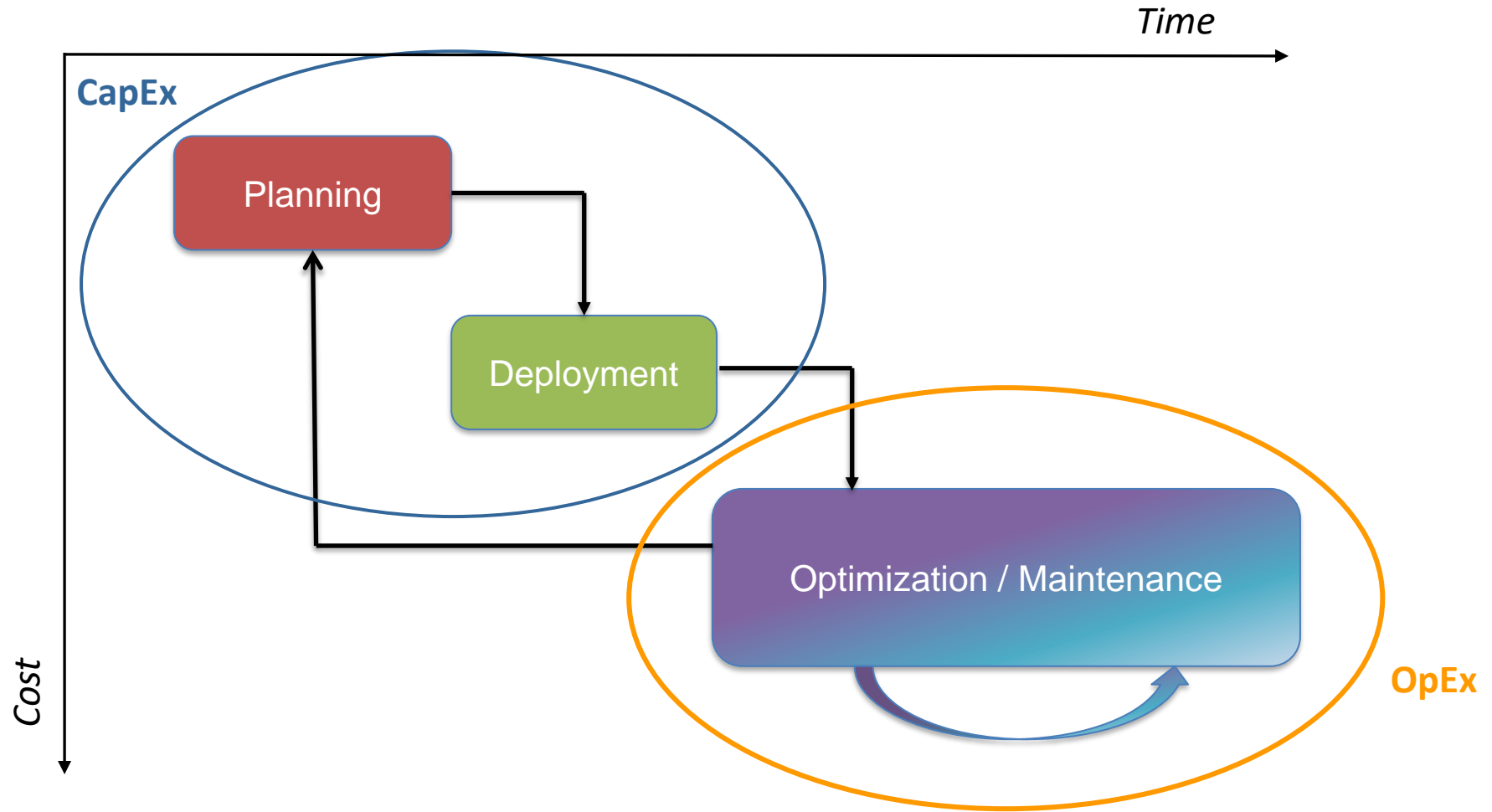
SON Series: Introduction
An Introduction to
Self-Organizing Networks (SON)



Typical Network Deployment Process



Typical Network Deployment Process



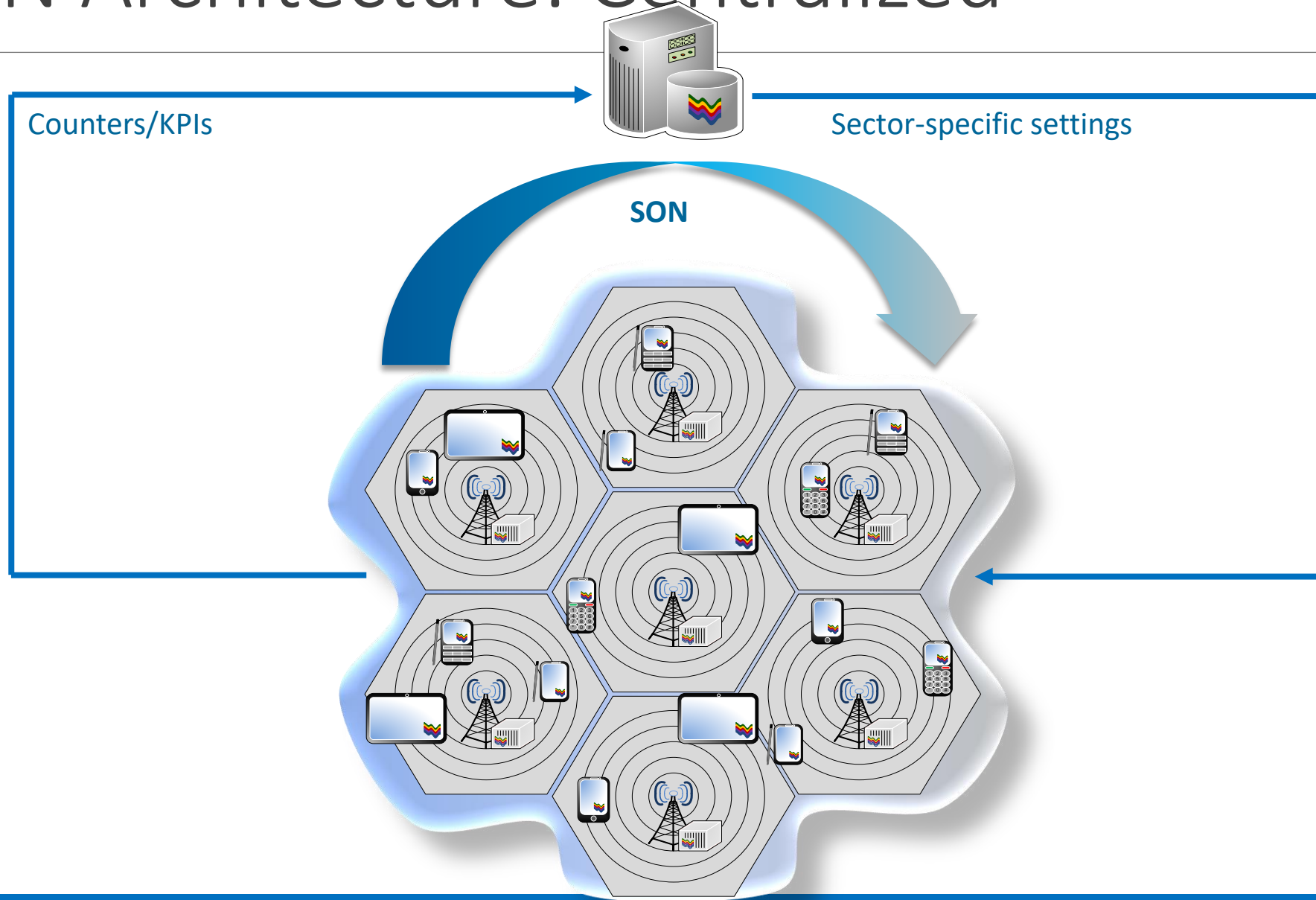
What is SON?

- Self-Organizing Networks (often referred to as Self-Optimizing Networks but Self-Optimization is part of SON) are designed to:
 - Make network deployments simpler & faster
 - Make network optimization easier
 - Make network issues identification & maintenance more efficient
- SON:
 - Improves the end-user Quality of Experience (QoE)
 - Reduces Capital Expenditure (CapEx) and Operational Expenditure (OpEx)

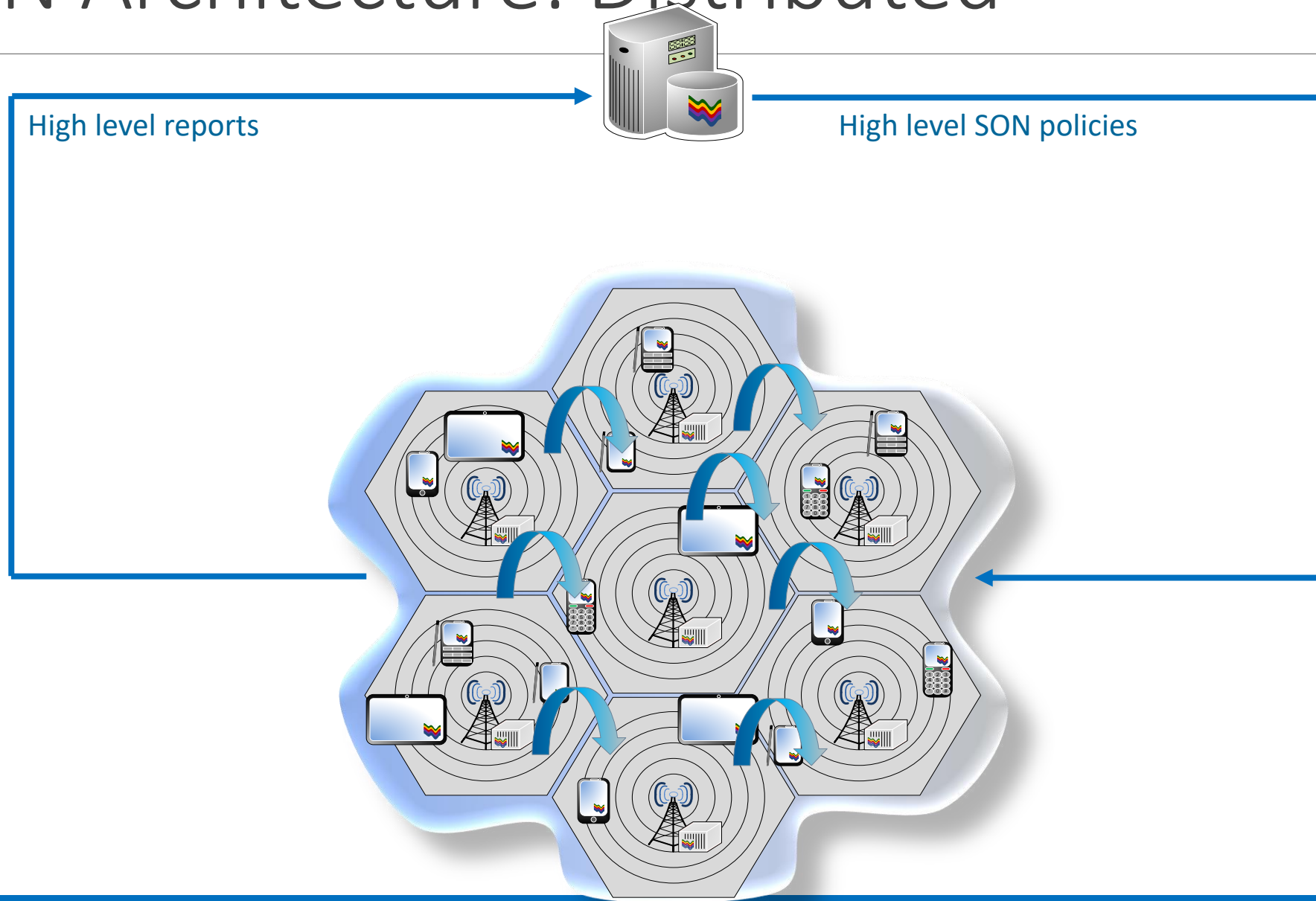
A bit of SON History



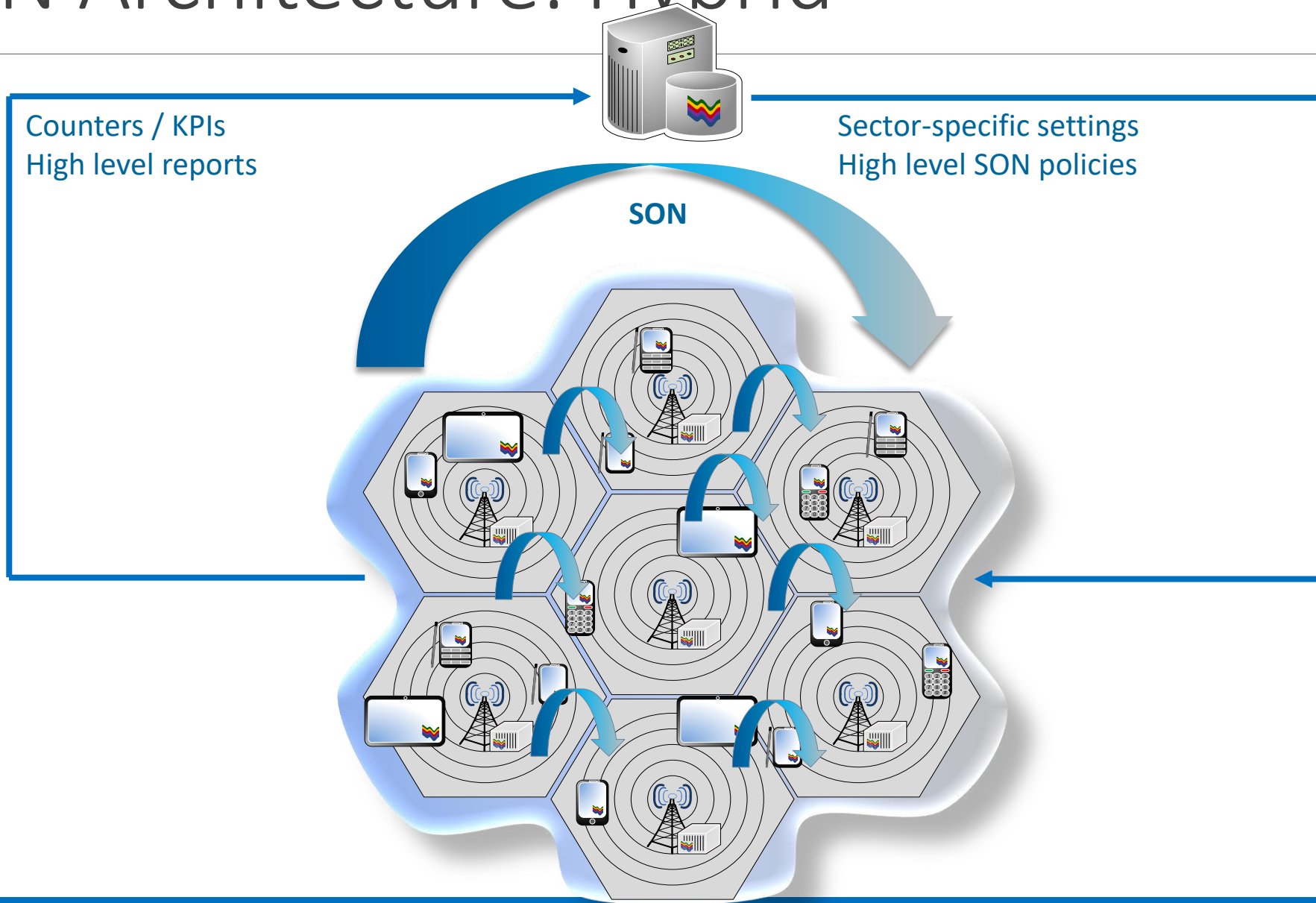
SON Architecture: Centralized



SON Architecture: Distributed



SON Architecture: Hybrid

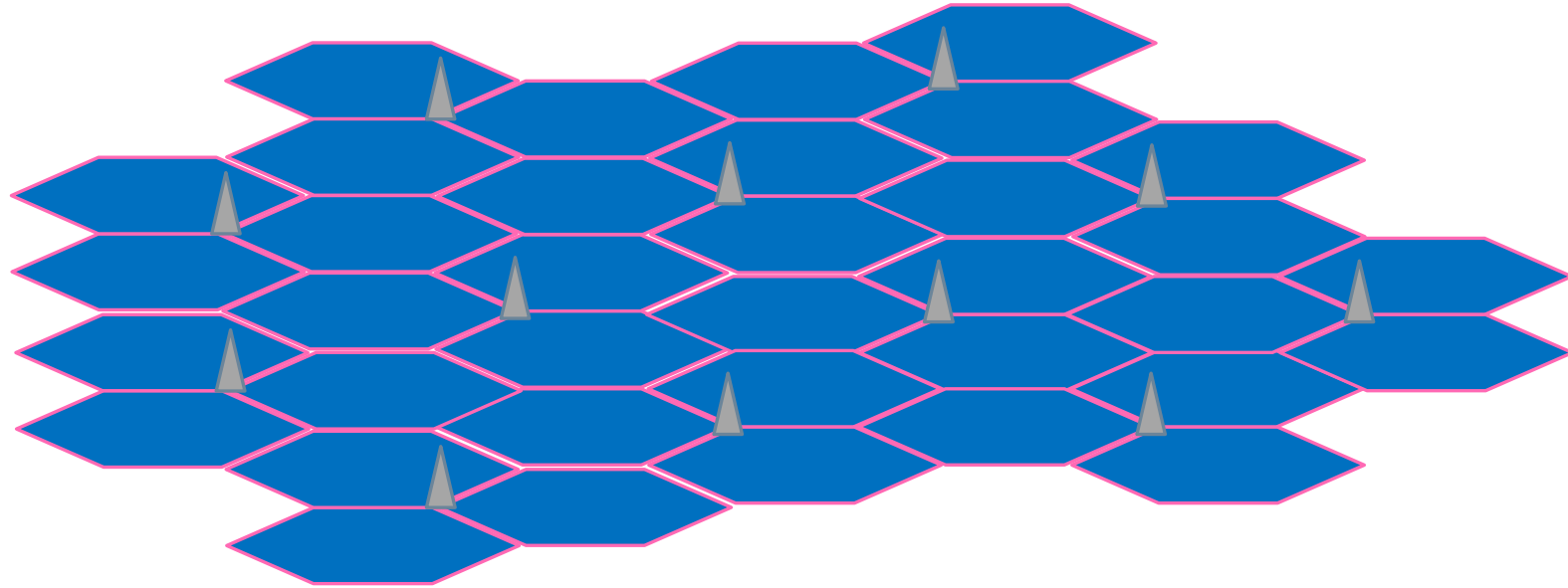


Three stages of SON



Self-
Configuration

Self-Configuration Example



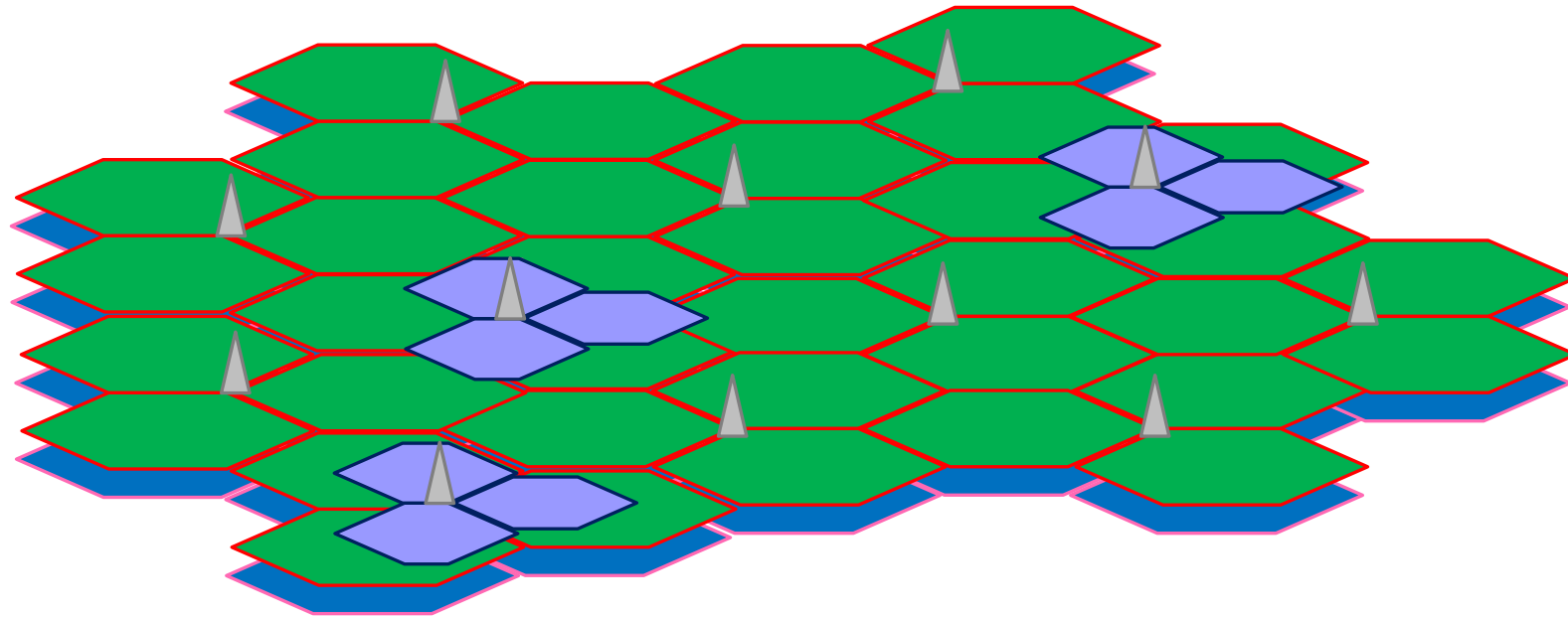
Three stages of SON

Self-Configuration

- Plug and Play (PnP)
- Faster Rollout
- Consistency
- Licensees, Hardware Inventory and Software build
- Efficient resource utilization

Self-Optimization

Self-Optimization Example



Three stages of SON

Self-Configuration

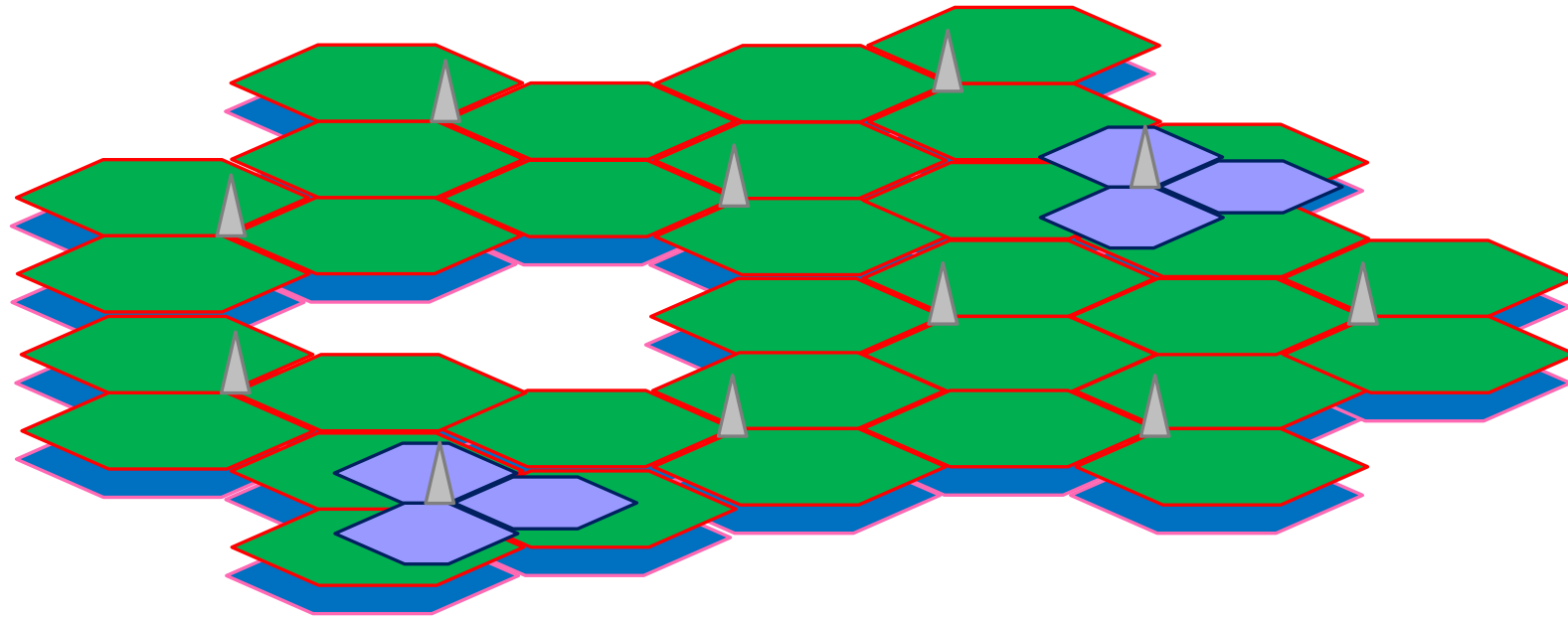
- Plug and Play (PnP)
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- Licensees, Hardware Inventory and Software build
- Efficient resource utilization

Self-Optimization

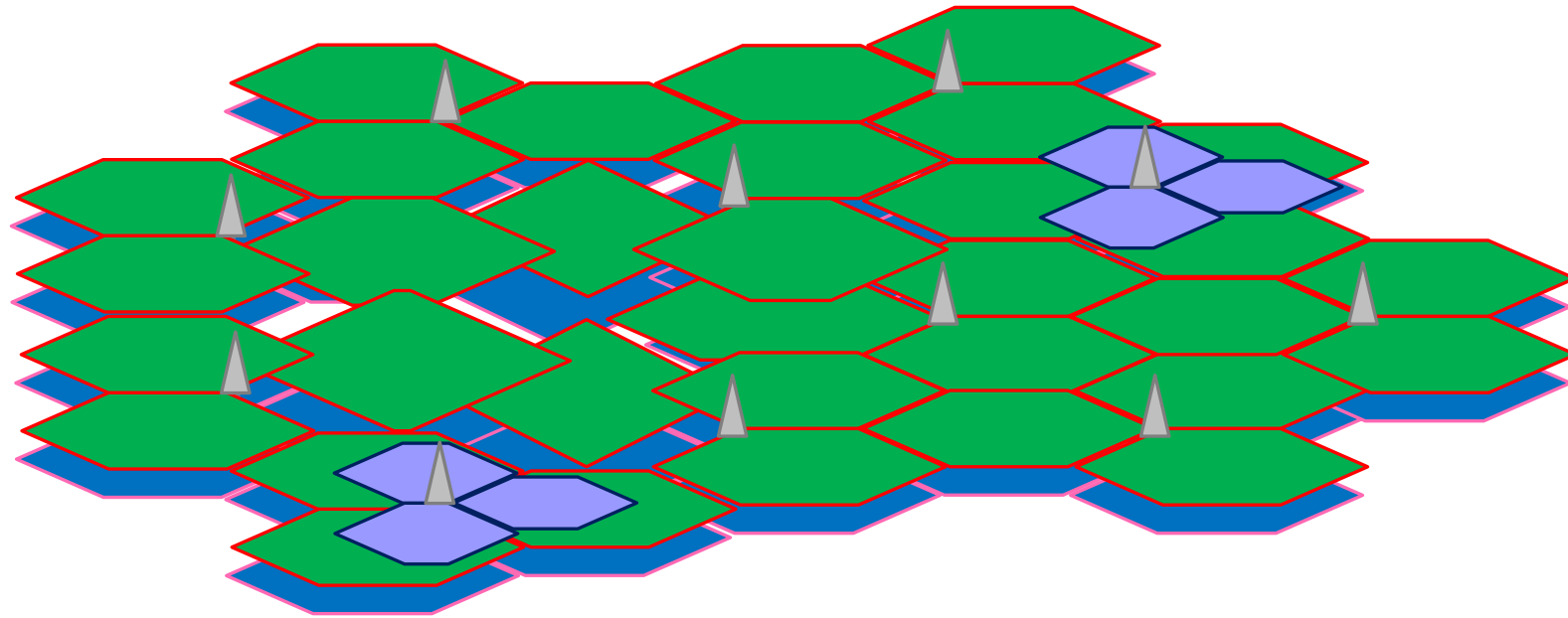
- Mobility Robustness Optimization (MRO)
- Mobility Load Balancing (MLB)
- Minimization of Drive Testing (MDT)
- Fast and proactive parameter optimization
- Increased Network performance

Self-Healing

Self-Healing Example



Self-Healing Example



Three stages of SON

Self-Configuration

- Plug and Play (PnP)
- Faster Rollout
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- Efficient resource utilization

Self-Optimization

- Mobility Robustness Optimization (MRO)
- Mobility Load Balancing (MLB)
- Minimization of Drive Testing (MDT)
- Fast and proactive parameter optimization
- Increased Network performance

Self-Healing

- Fast, autonomous failure mitigation
- Continuous performance monitoring
- Faster Network maintenance
- More efficient resource utilization, less effort

References for further study

- **Research Paper** – From 4G to 5G: Self-organized Network Management meets Machine Learning by Jessica Moysen and Lorenza Giupponi ([link](#))
- 3G4G: Self-Organizing Networks / Self-Optimizing Networks ([link](#))
- The 3G4G Blog: SON ([link](#))

Thank You

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