



Connecting Sensor Network Islands to the Future Internet using the SpovNet Architecture

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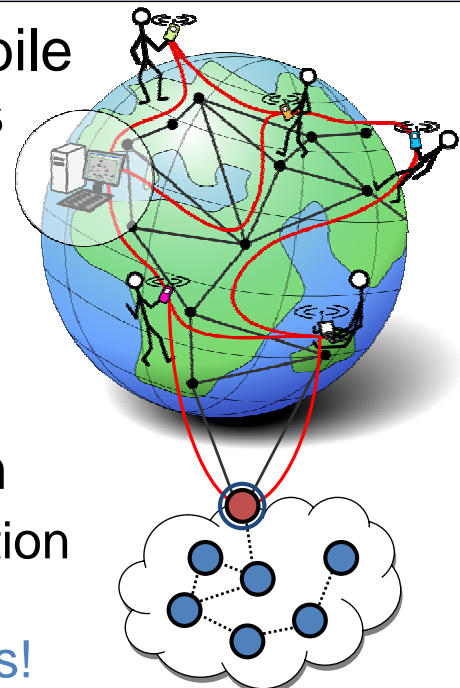
8th Würzburg Workshop on IP: Joint EuroNF, ITC, and ITG Workshop on
"Visions of Future Generation Networks" (EuroView2008)
July 21st - July 22nd 2008, Würzburg/Germany

Our Future Internet Vision



1. Connect any kind of mobile device in heterogeneous environments
2. Easy and global service deployment
3. Everything is information
 - don't care where information comes from

→ e.g. sensor network islands!



What about a practical scenario?



- „Mobility, heterogeneity, global service deployment, sensor networks ... “
... sounds nice, but why do we need all this?
→ need exemplary scenario based on this features!
- Our contribution
 1. Provide a scenario that
 - requires mobility, heterogeneity, global service deployment, and sensor network islands
 - shows practical applicability and benefit
 2. Explain how the SpovNet architecture can be used to implement this scenario

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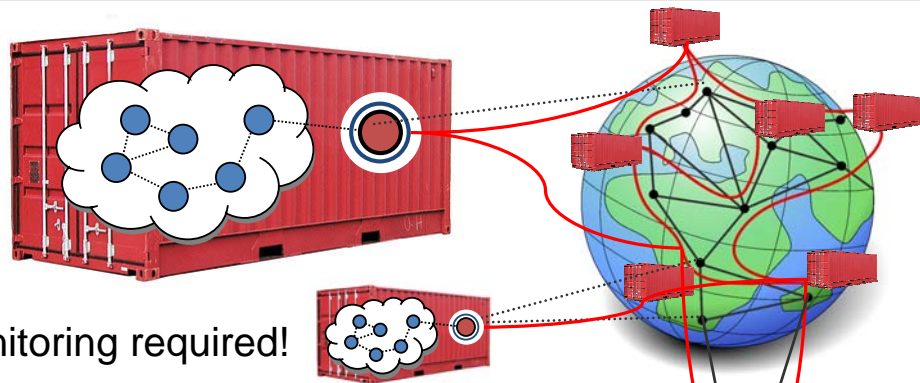
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Scenario: Cargo monitoring



Temperature sensitive
Dangerous
Expensive



→ Special monitoring required!

Transportation and stationary places



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Scenario characteristics



- **Monitoring of cargo container transports**
 - provide best-continuous online monitoring
 - use heterogeneous connectivity and exploit cargo transport route
 - use sensor networks for monitoring
 - **Why is this a good scenario?**
 - highly mobile nodes in heterogeneous networks
 - incorporates sensor network islands
 - needs global and flexible service deployment
- shows some real benefit
- hard to implement with today`s Internet

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Scenario details



- **Best-continuous online monitoring**
 - e.g. transport of temperature sensitive and valueable goods
 - provides early planning of intervention
 - e.g. replacement of a failed cooling device at next harbor
 - legal reasons to use in-house mechanics for repairing
- **Connectivity**
 - WLAN in lading ports,
 - satellite connectivity on container ships, ...
- **Sensor networks for monitoring**
 - attached to the container itself
 - attached to goods

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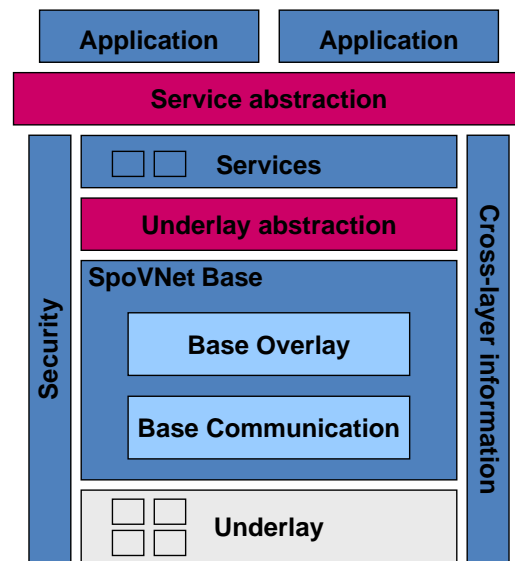
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How SpoVNet supports the scenario



- SpoVNet provides
 - mobility
 - heterogeneity
 - flexible service deployment
 - and more ...



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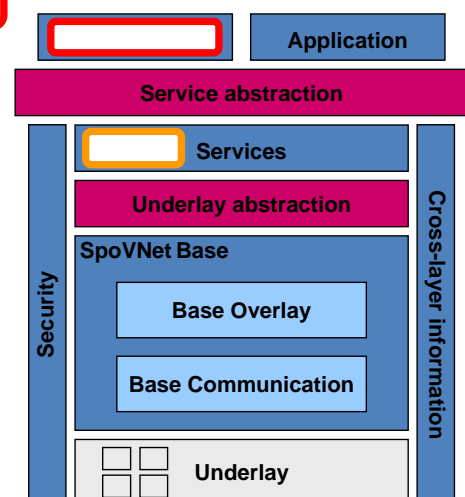
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Implementing the scenario using SpoVNet



1. Implement two new components using SpoVNet
 - Sensor Network Service
 - Container Monitoring Application
2. SpoVNet node per container
 - the sensor network island sink
 - controls the sensor nodes



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Conclusions



- We presented
 - an **exemplary scenario** that utilizes Future Internet features, based on cargo monitoring
 - how to implement the scenario with SpoVNet
- Take-away points
 1. cargo monitoring fits quite well as reference scenario
 2. **SpoVNet enables flexible service deployment for mobile nodes in heterogeneous environments**



Thank you!

Questions?