



# SENDATE – Mid Term Review

Harald Bock



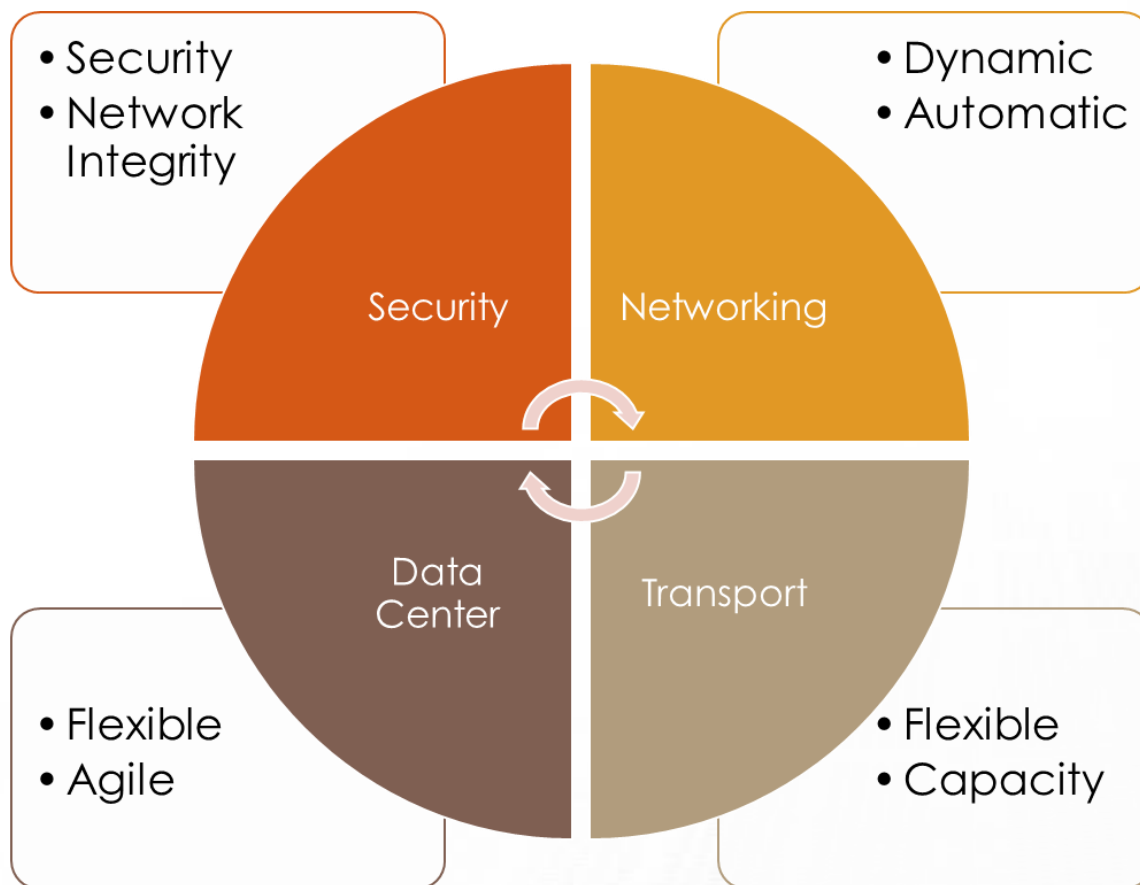
Paris, November 21, 2017



# Subproject FICUS

## → FICUS:

**F**lexible **I**nfrastructure for data center **C**ommunication providing **U**nique **S**ecurity

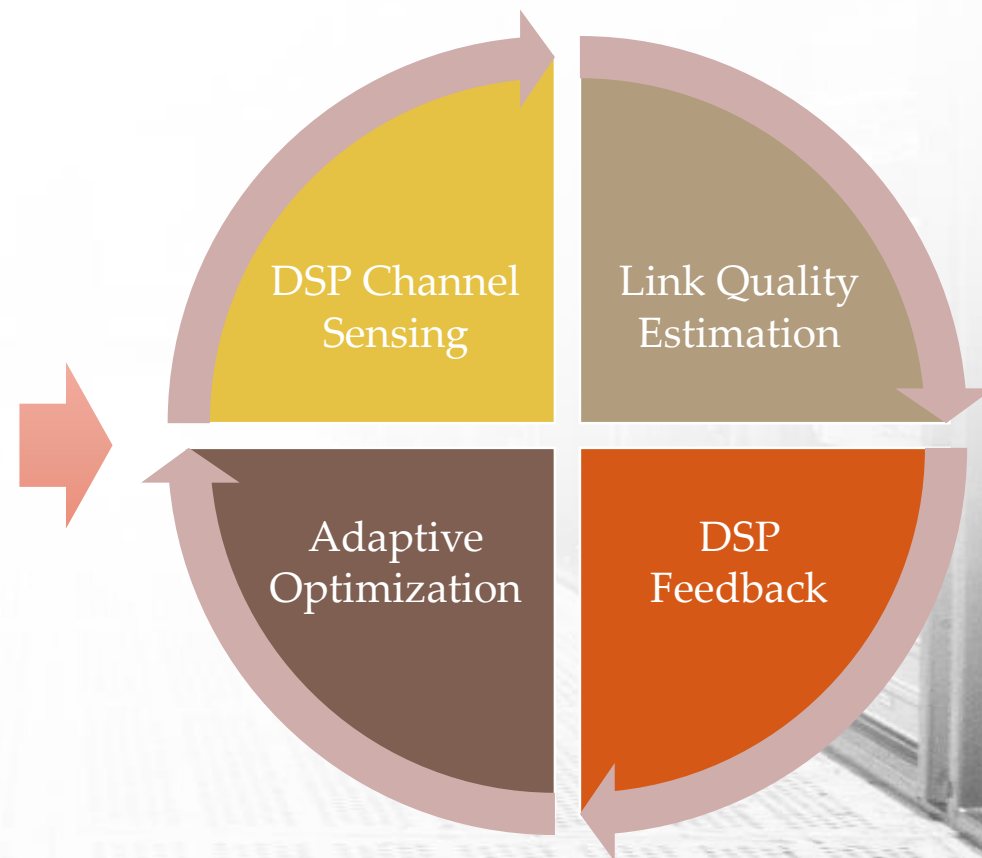
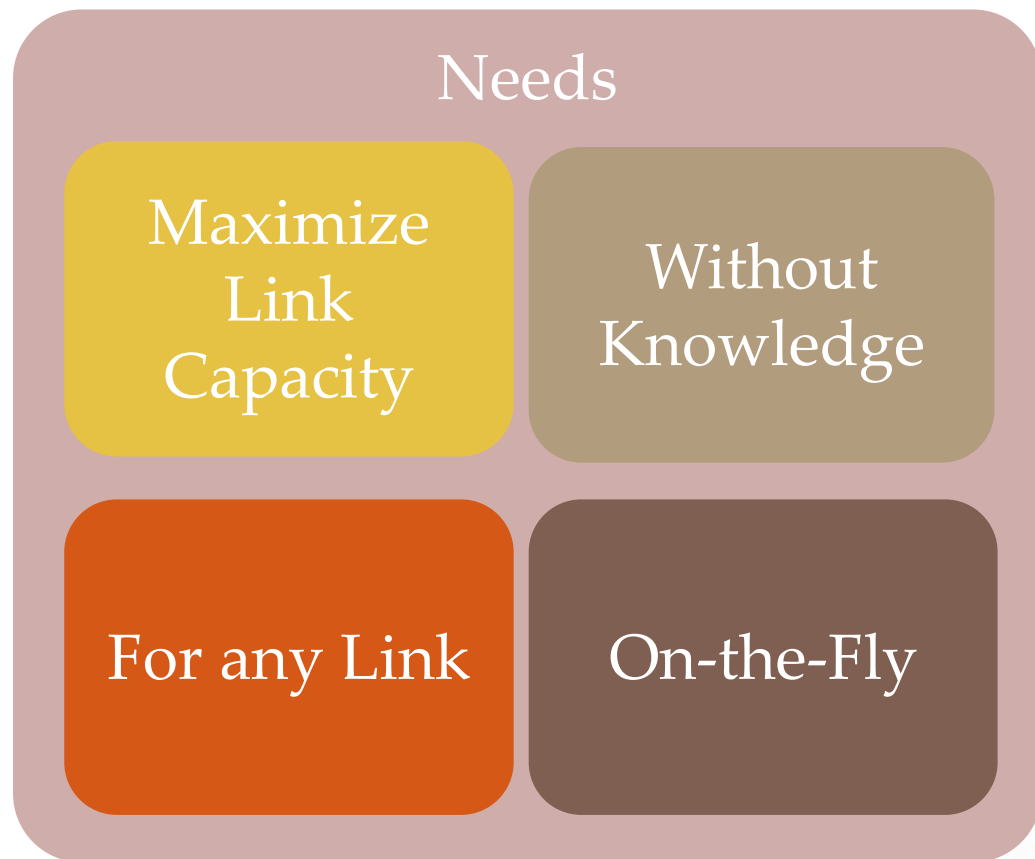


- Future Networks are Reconfigured Frequently and Automatically According to Demand

**FICUS** lead by

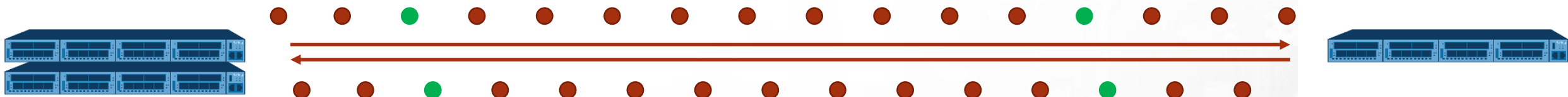
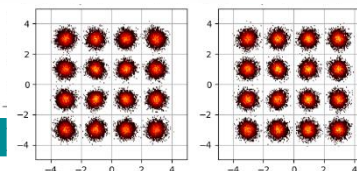


# Autonomous Intelligent Transponder

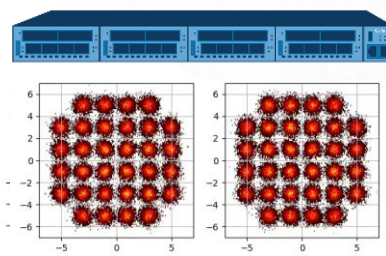
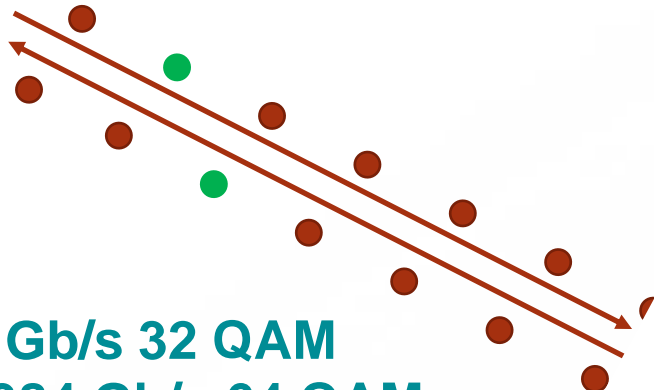


# Autonomous Intelligent Transponder for DC-I Optimizing Link Capacity vs Reach

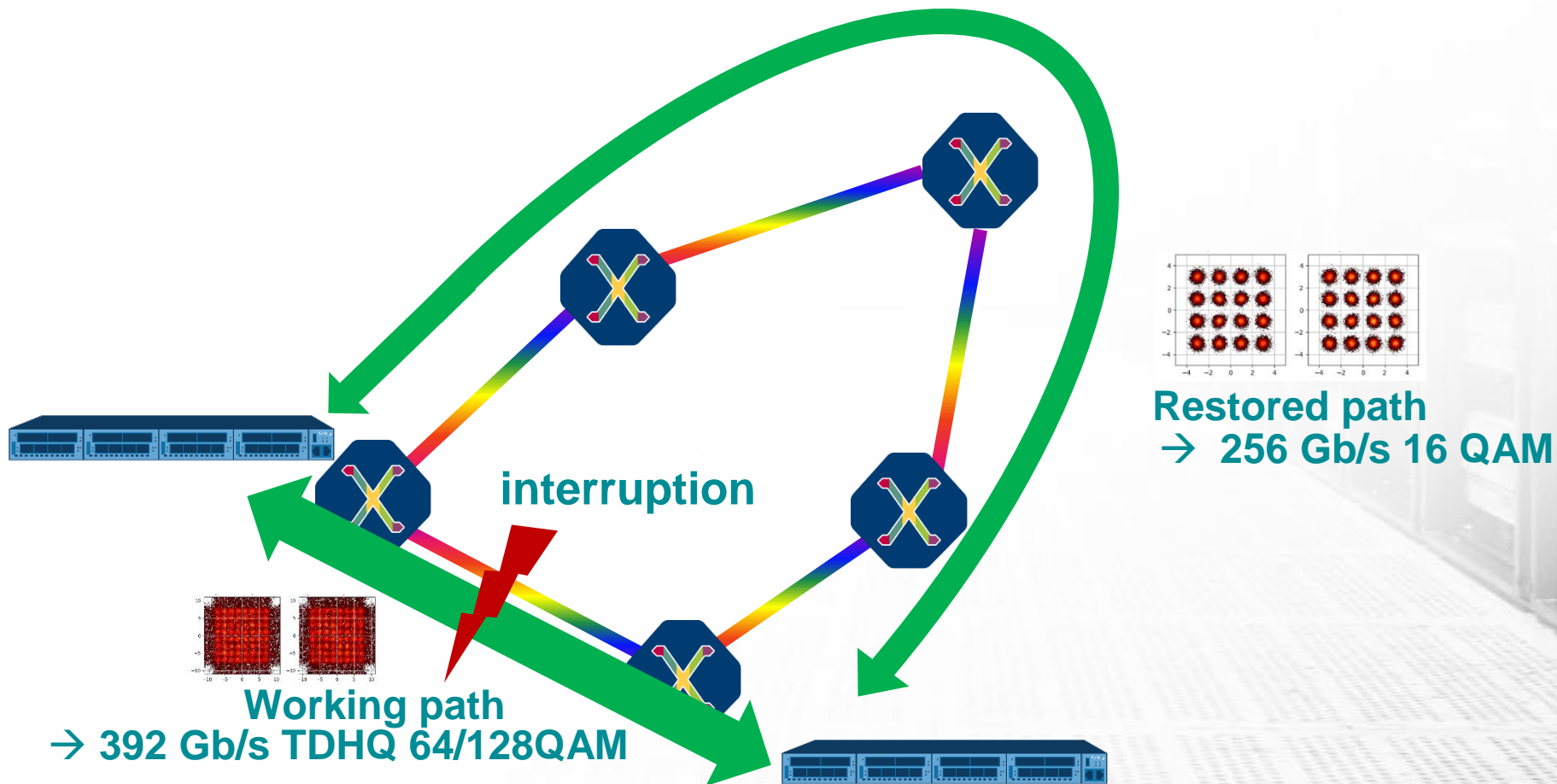
320 Gb/s 32 QAM  
 → 256 Gb/s 16 QAM  
 → Long reach interconnect



320 Gb/s 32 QAM  
 → 384 Gb/s 64 QAM  
 → 392 Gb/s TDHQ 64/128QAM  
 → Short reach interconnect



# Autonomous Intelligent Transponder Network Resiliency Use-Case: Optical Restoration



# Ficus & Coriant CloudWave Optics - Part of a Changing Network Environment

## Sendate:

- secure operations (Coriant Lisbon)
- physical layer security
- QKD close to today's HW



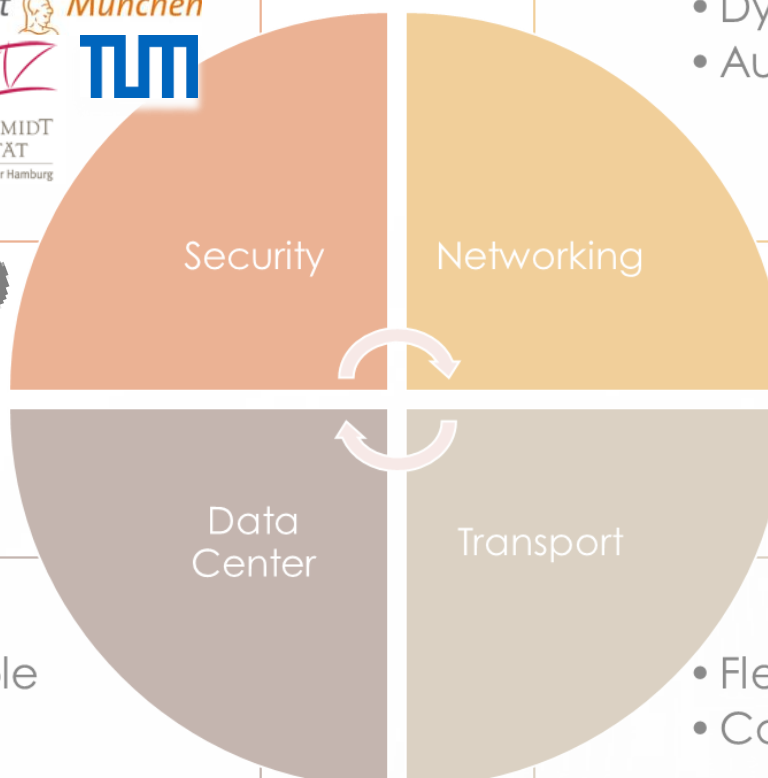
Payload encryption 

## Autonomous Intelligent Transponder

- Dynamic
- Automatic

- multiple modulation formats
- flexible baud rate
- several FEC options
- flexible channel grid

## CloudWave™ Optics Technology



## DC optimized

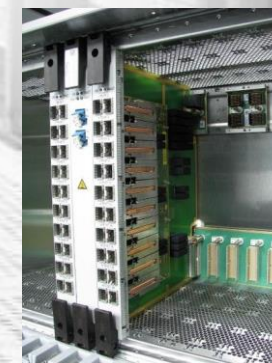


- Flexible
- Agile

## Coriant DWDM

designed, developed & manufactured in Germany

- Flexible
- Capacity



# FICUS Consortium



- Coriant R&D GmbH 
- VPIphotonics GmbH
- Helmut-Schmidt-Universität Hamburg
- TU Dortmund 
- TU München
- Universität der Bundeswehr München
- RISE Acreo AB 
- Finisar Sweden AB
- PacketFront Software Solutions AB
- Proximion AB 
- Telia Company AB



# Summary

- Ficus focuses on relevant areas for efficient, flexible, reliable and secure communication networks
- Ficus strives for innovative solutions at the technological edge
  - Research challenges are afflicted with significant risks
  - High R&D invest with RoI only many years from now

Continued support from European institutions and German government is required in order to keep the European telecommunication industry

- competitive in a global business environment and get it back into a leading position
- rebuild trust in communication networks
- foster collaboration in an international network of research and industry partners
- maintain and create jobs
  - with Coriant in a unique position in Europe:  
not only R&D in Munich, Lisbon & Espoo but also production: Coriant manufactures in Berlin

supported by



**Tekes**

