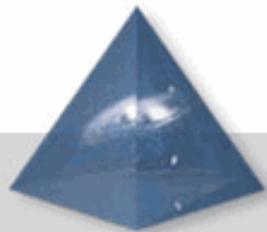


# Optical Networking / Experiences @ iGrid2002

[www.science.uva.nl/~deLaat](http://www.science.uva.nl/~deLaat)

## Cees de Laat



Faculty of Science



# iGrid 2002

The International Virtual  
Laboratory

[www.igrd2002.org](http://www.igrd2002.org)

**24-26 September 2002**  
**Amsterdam Science and Technology Centre (WTCW)**  
**The Netherlands**

- A showcase of applications that are “early adopters” of very-high-bandwidth national and international networks
  - What can you do with a 10Gbps network?
  - What applications have insatiable bandwidth appetites?
- Scientists and technologists to optimally utilize 10Gbps experimental networks, with special emphasis on e-Science, Grid and Virtual Laboratory applications
- Call for Participation (we may still accept good proposals despite deadline passed)
- iGrid is not just a conference/demonstration event, **it is also a testbed!!**
- Contact
  - [maxine@startup.net](mailto:maxine@startup.net) or [deLaat@science.uva.nl](mailto:deLaat@science.uva.nl)

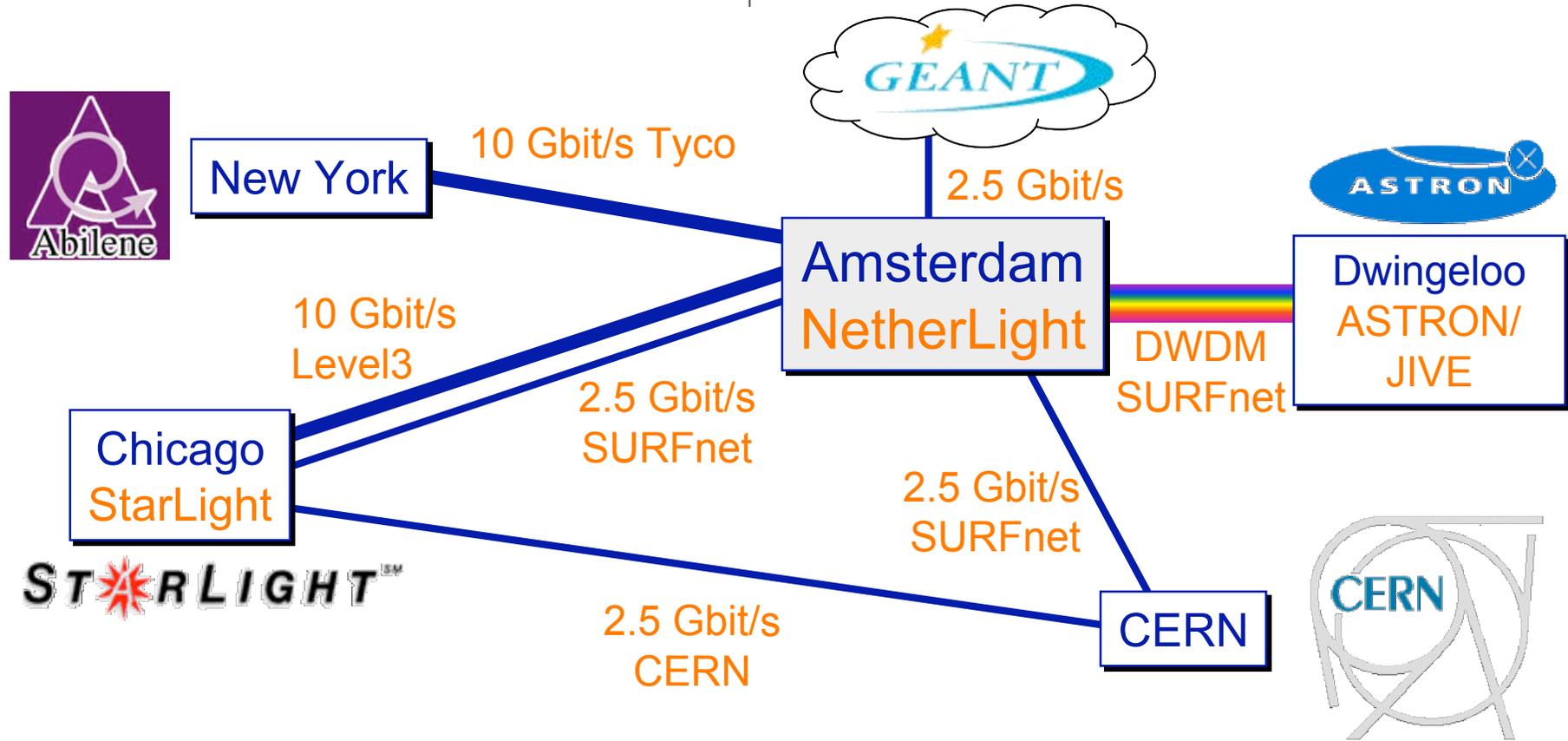
# iGrid2002

- [www.igrid2002.org](http://www.igrid2002.org)
- 26 demonstrations
- 16 countries (at least)
- Level3, Tyco, IEEAF Lambda's
- CISCO, Hp equipment sponsoring
- Shipping nightmare, debugging literally (Asian beetles)
- ~30 Gbit/s International connectivity
- Huge networking collaboration
- Smelly NOC in the iGrid preparation weekend

# International networking in full operation

**GigaPort**

The network for



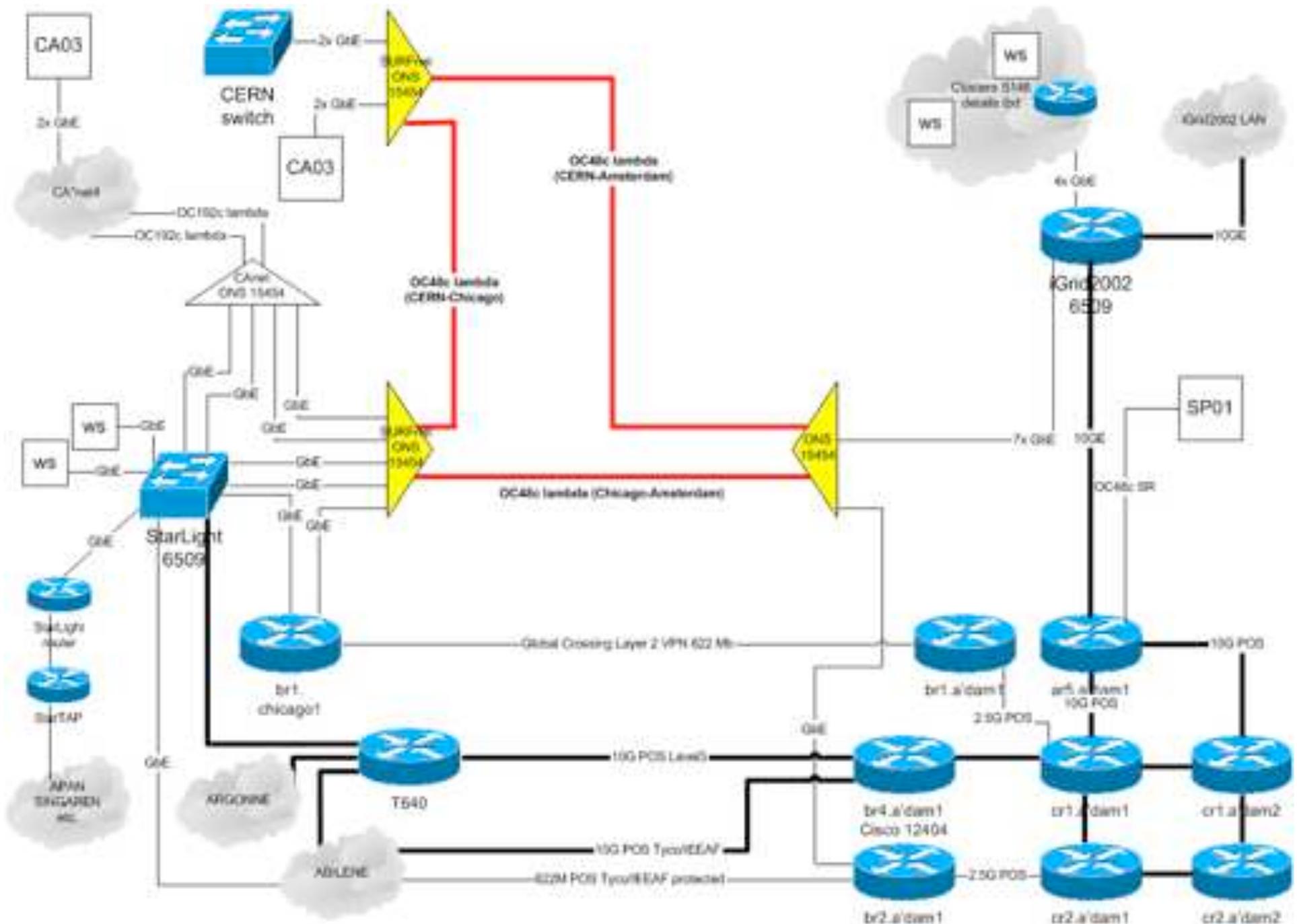
**SURFnet**

# Real Lambda's



# eVLBI







Some impressions

# NOCC



GridFTP  
testcluster







# American tourist in Amsterdam



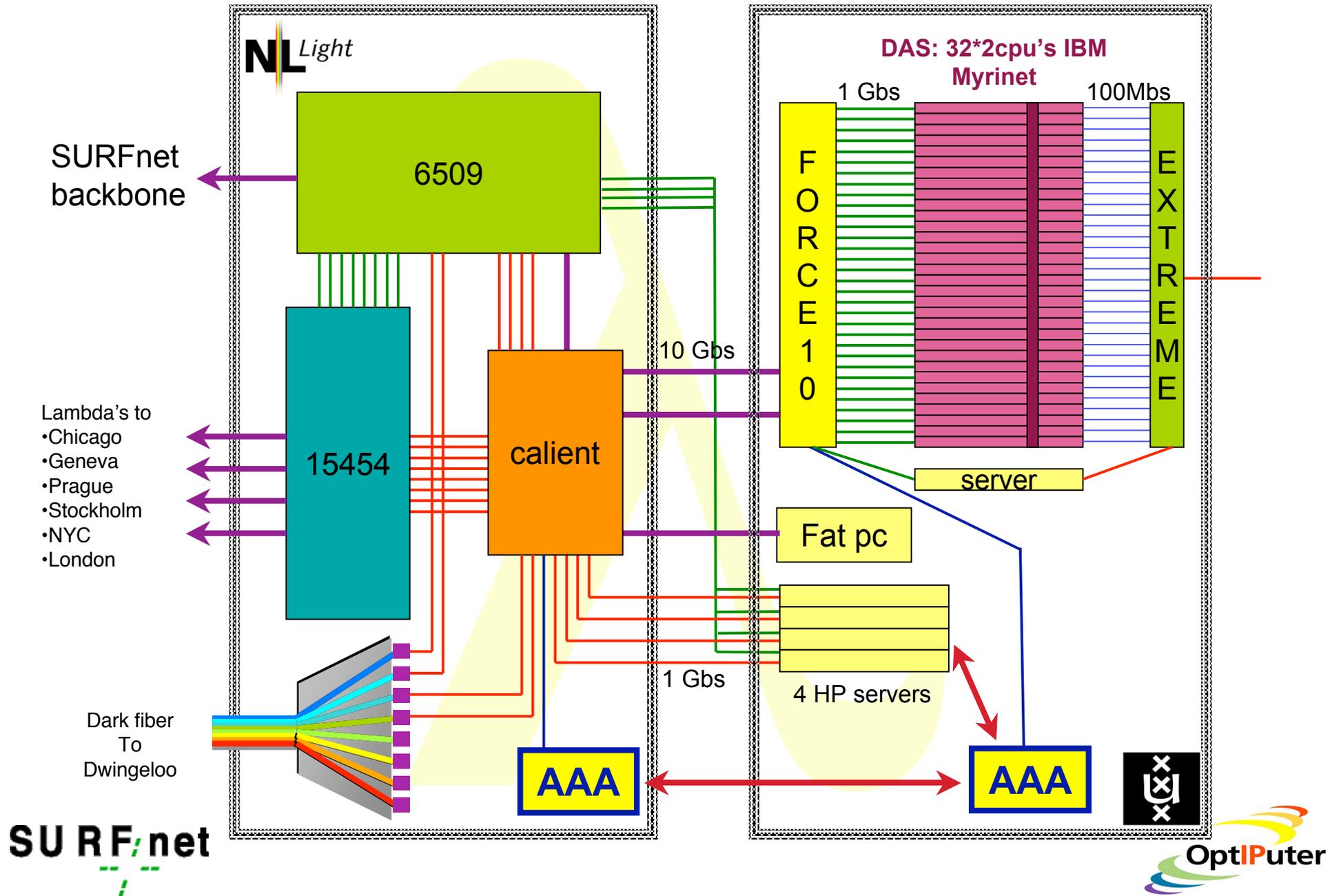
# Lessons learned

- **Most applications could not cope with the network!!!**
- **No bottleneck whatsoever in the network**
- **Many got about 50 - 100 Mbit/s singlestream tcp**
- **On Sunday evening my laptop had the highest single stream to Chicago (~ 340 Mbit/s)**
- **NIC's, Linux implementation and timing problem**
- **Gridftp for example severely hit**
- **Classical networking protocols which work well on national scale tend to break transatlantic**

# Conclusions

- [www.igrid2002.org](http://www.igrid2002.org)
- Even more bandwidth now at NetherLight
- SuperComputing 2002
- TransLight project
- Providing solutions for e-Science projects
- Rich networking research area
- 22 papers published in FGCS June 2003 issue

# NetherLight UvA Setup



# The END

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**RESERVED**

Case  
Delaat

3/12/2003

9:00 AM - 3:00 PM  
Wednesday

