

# GreenSonar

BOF

co-chairs's:  
(?) Cees de Laat & (?) Inder Monga

GGF35, Delft, June 2012

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# Agenda

Monday Mar. 18th, 9h30 – 10h30

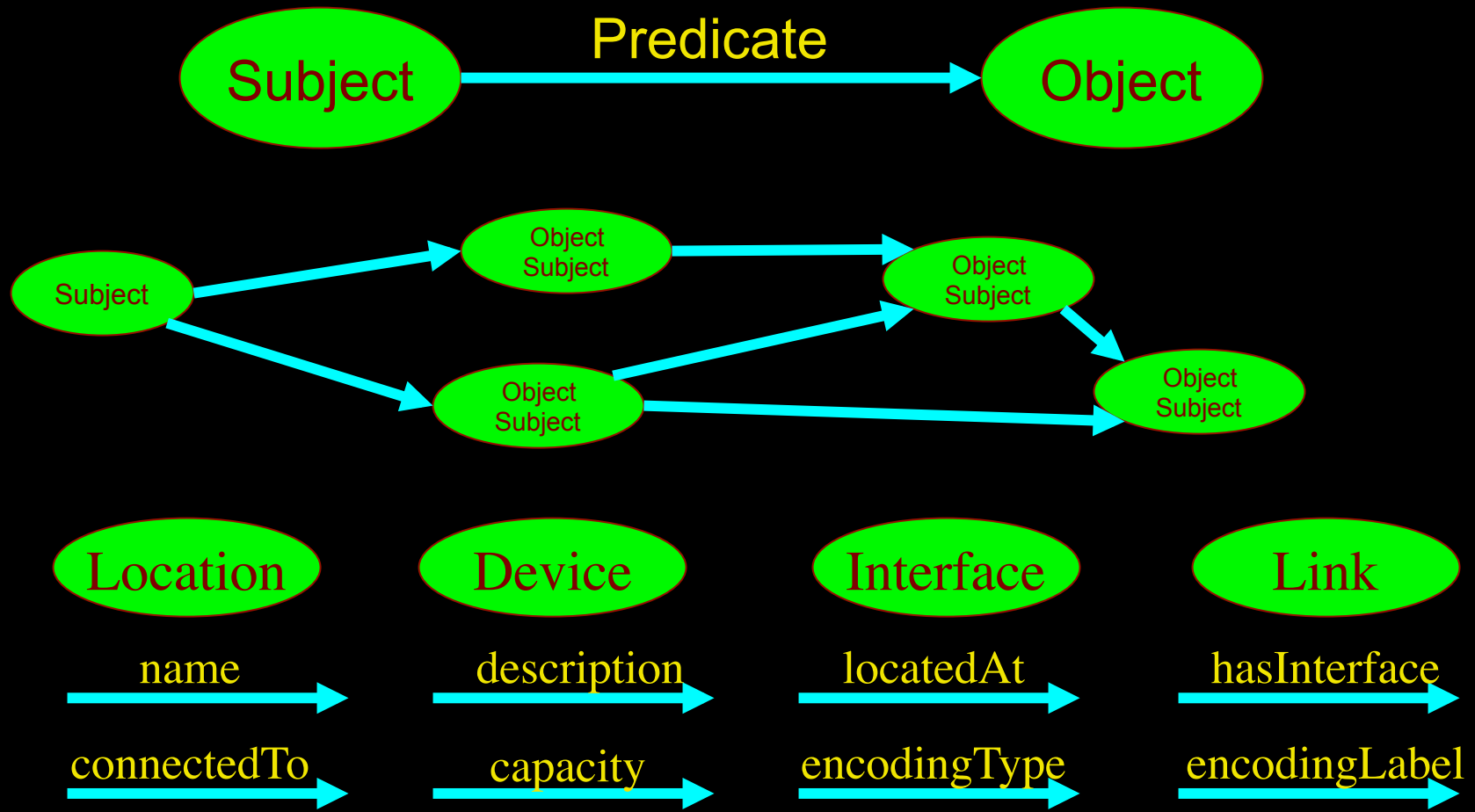
- Agenda Bashing
- Proposal
- Leadership
- Any Other Subject
- Adjourn



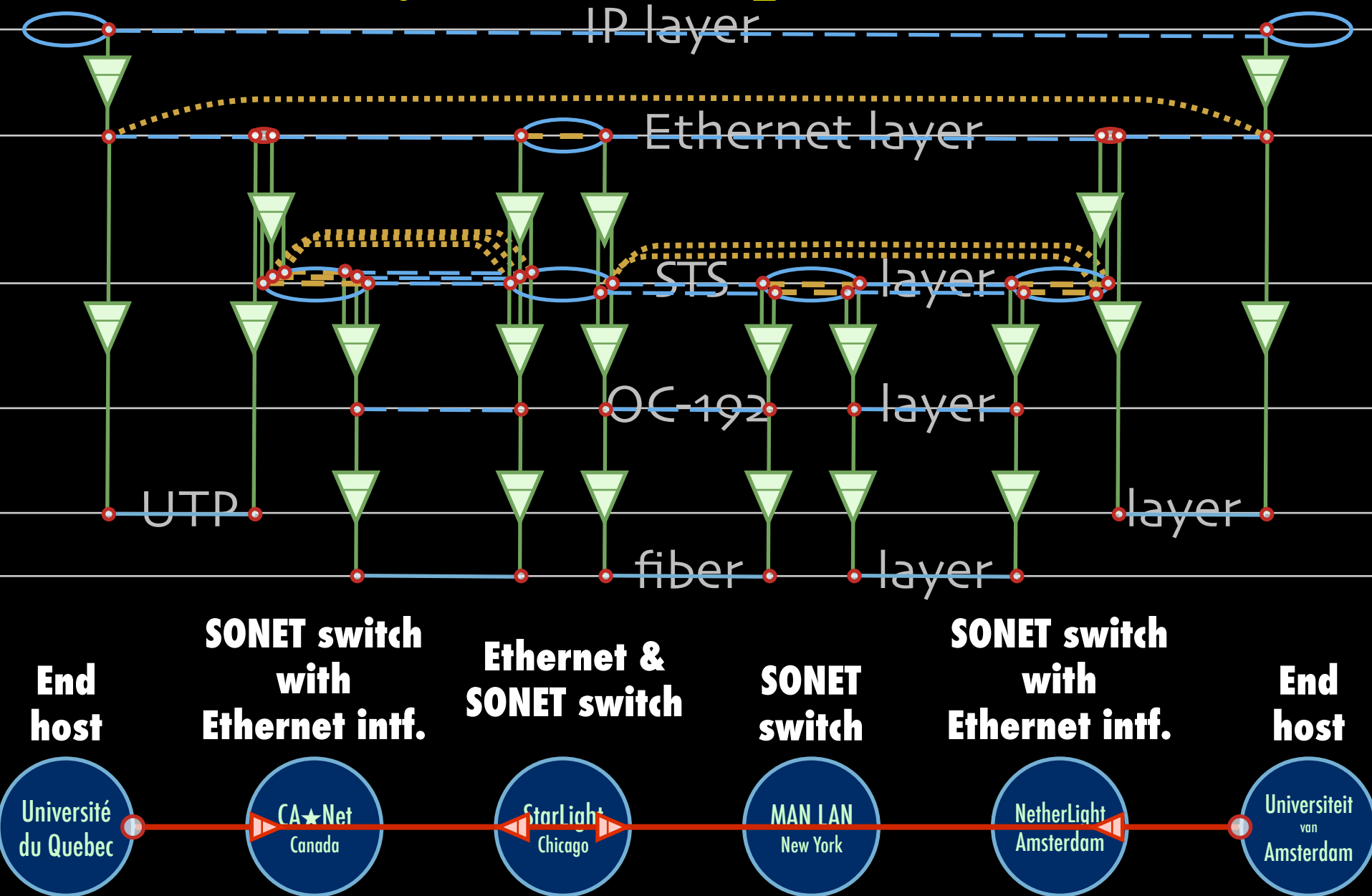
# LinkedIn for Infrastructure



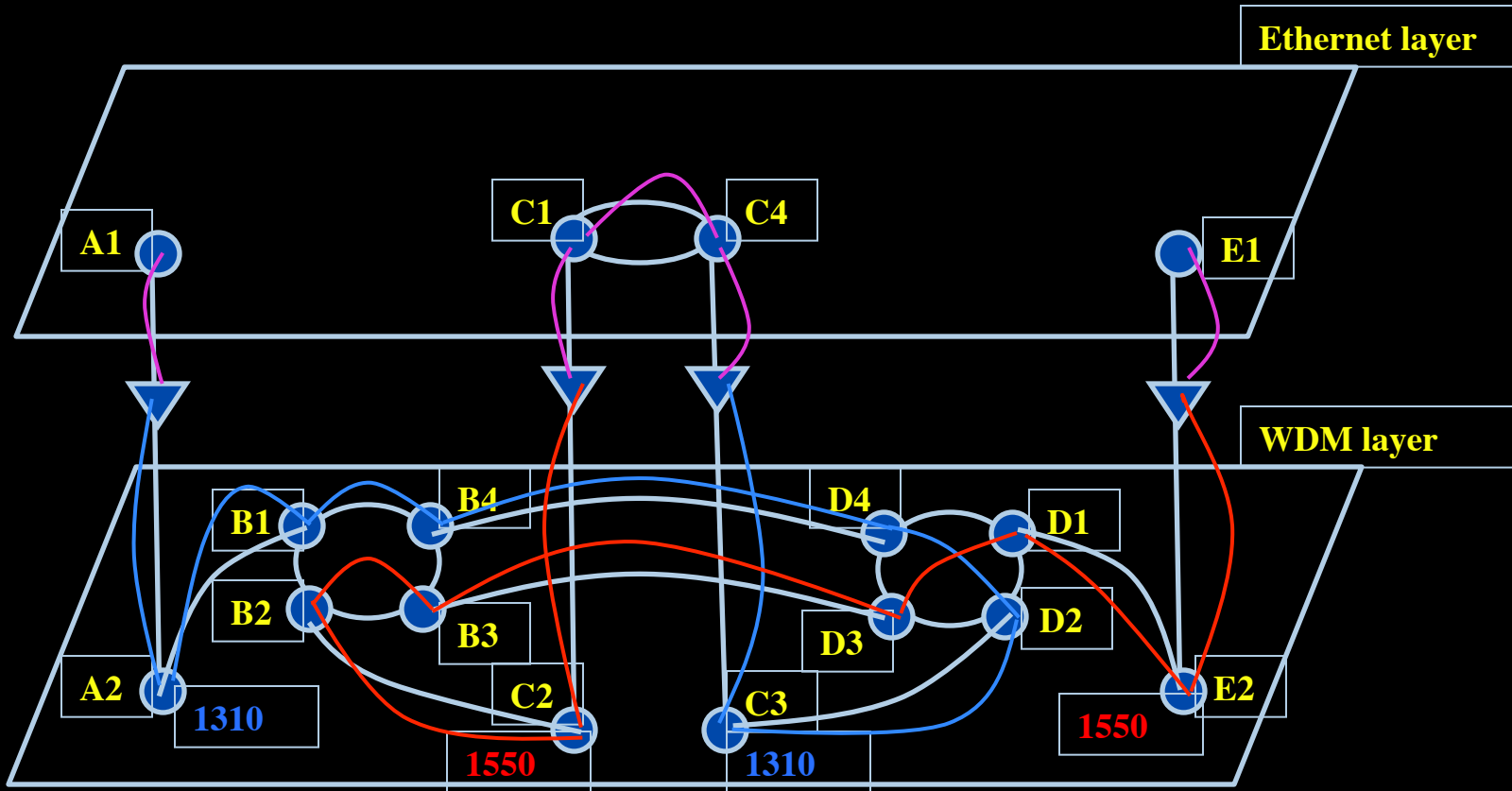
- From semantic Web / Resource Description Framework.
- The RDF uses XML as an interchange syntax.
- Data is described by triplets (Friend of a Friend):



# Multi-layer descriptions in NDL



# Multi-layer Network PathFinding



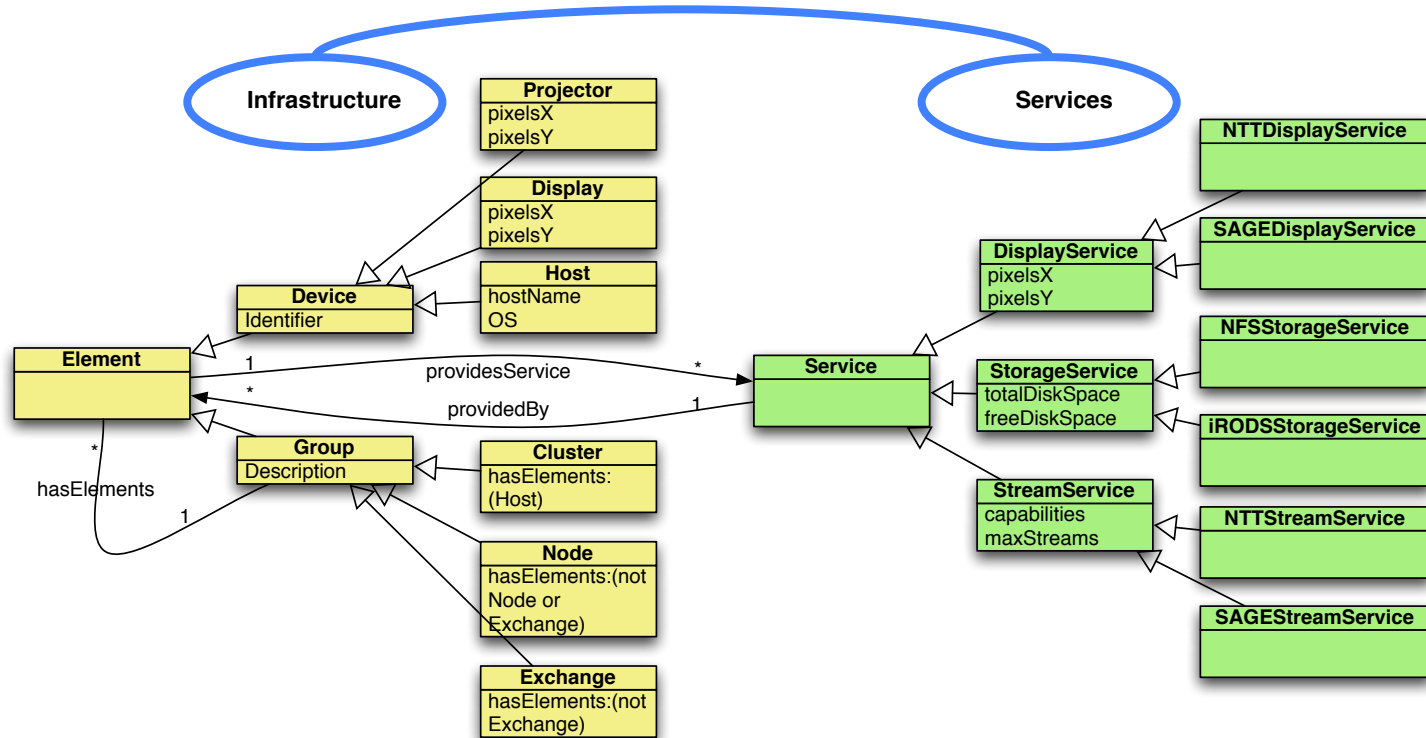
Path between interfaces A1 and E1:

A1-A2-B1-B4-D4-D2-C3-C4-C1-C2-B2-B3-D3-D1-E2-E1

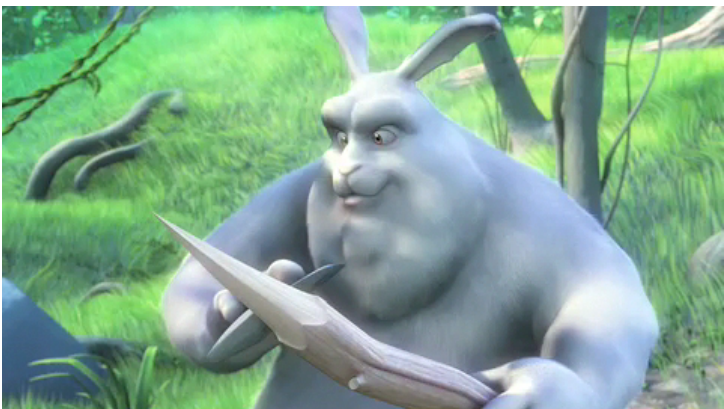
Scaling: Combinatorial problem

# Information Modeling

Define a common information model for **infrastructures** and **services**.  
Base it on Semantic Web.







I want to

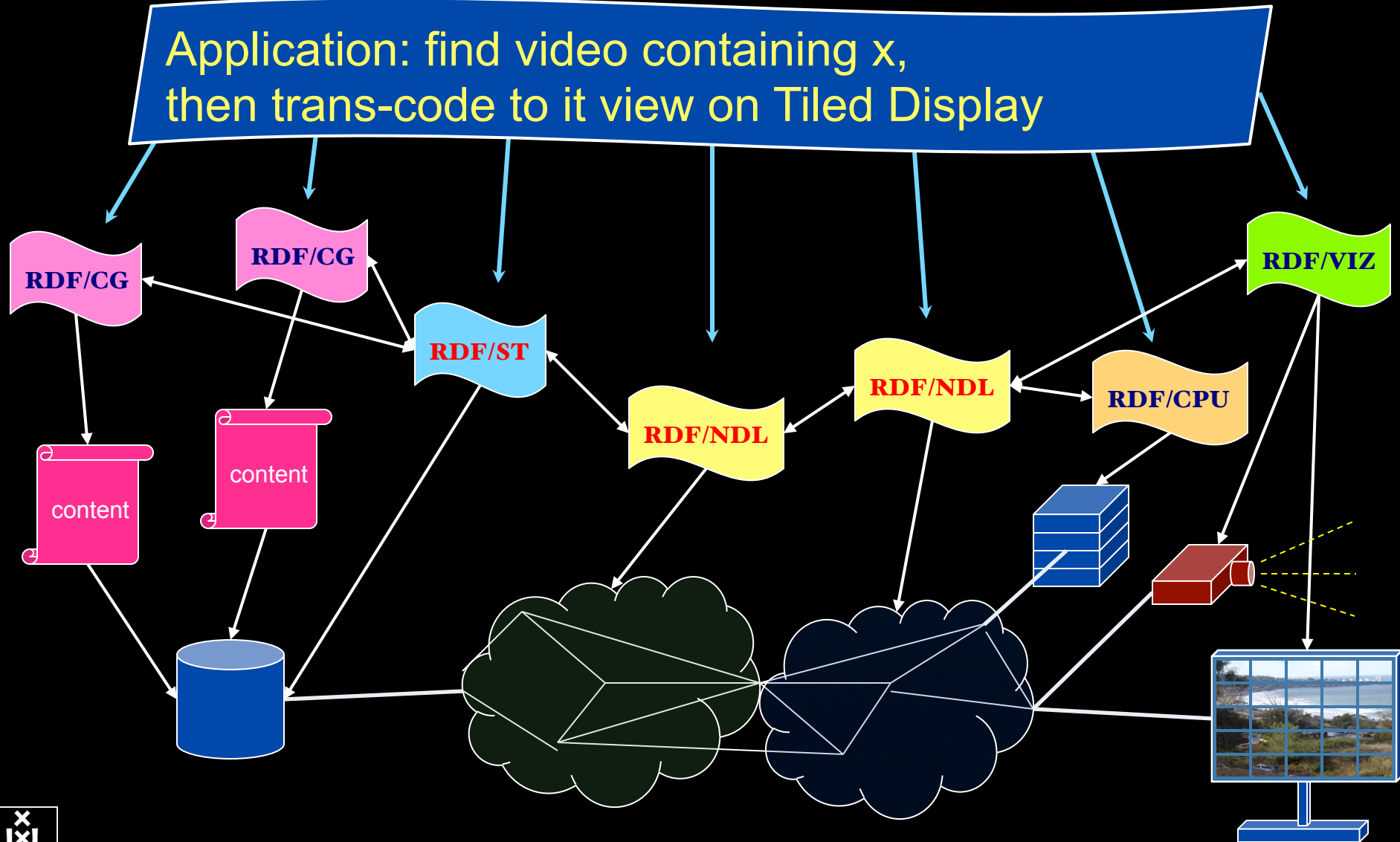


“Show Big Bug Bunny in 4K on my Tiled Display using green Infrastructure”

- Big Bugs Bunny can be on multiple servers on the Internet.
- Movie may need processing / recoding to get to 4K for Tiled Display.
- Needs deterministic Green infrastructure for Quality of Experience.
- Consumer / Scientist does not want to know the underlying details.  
➔ His refrigerator also just works.

# RDF describing Infrastructure “I want”

Application: find video containing x,  
then trans-code to it view on Tiled Display

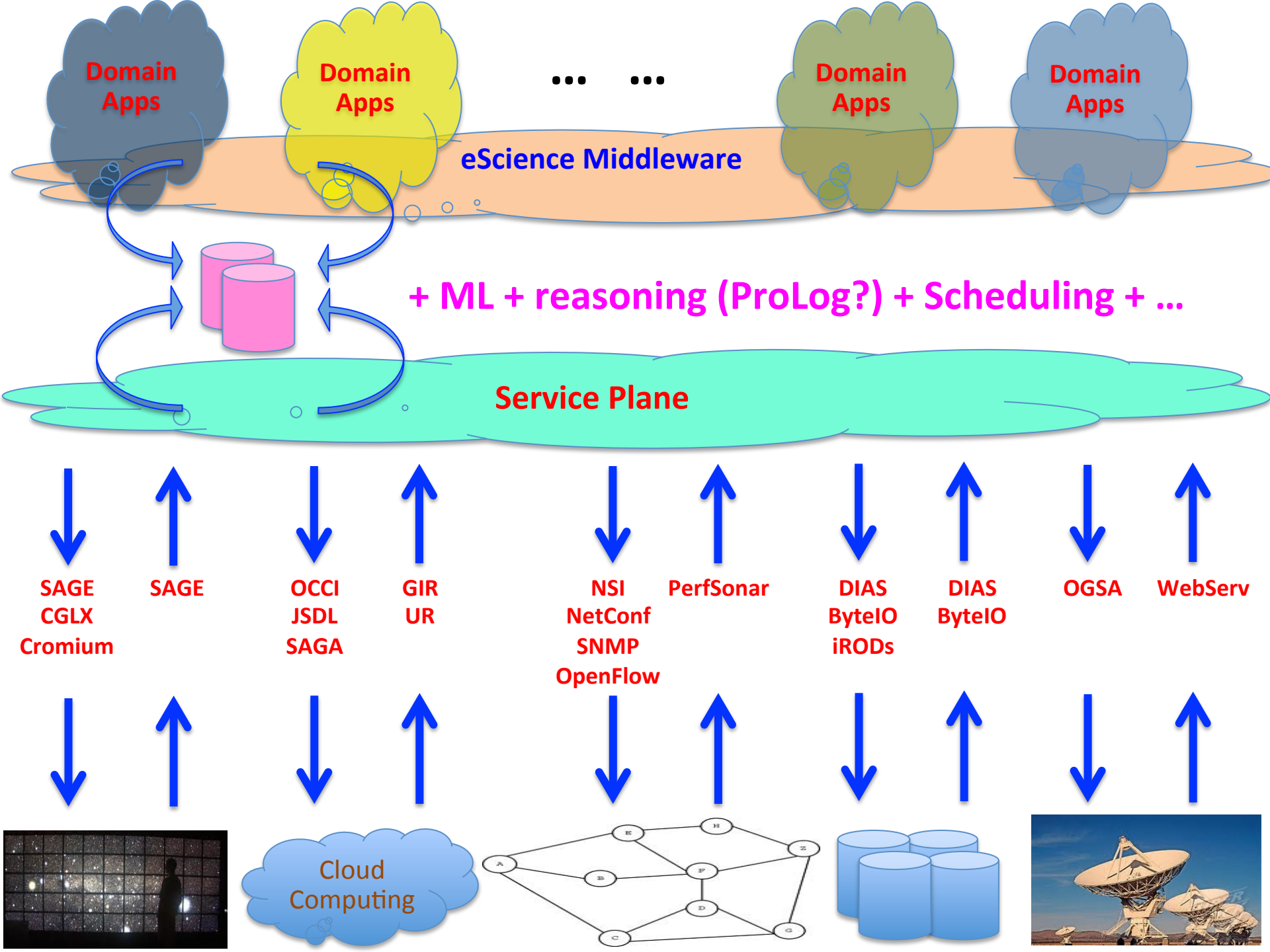


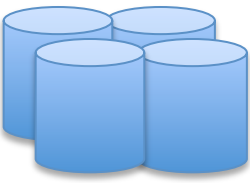
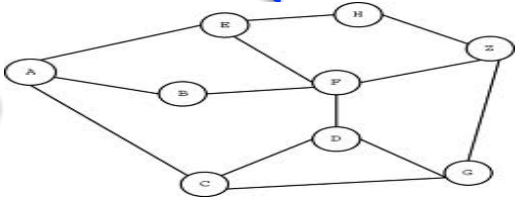
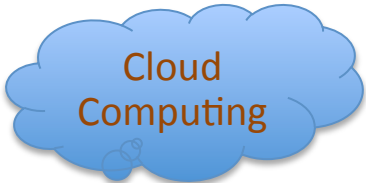
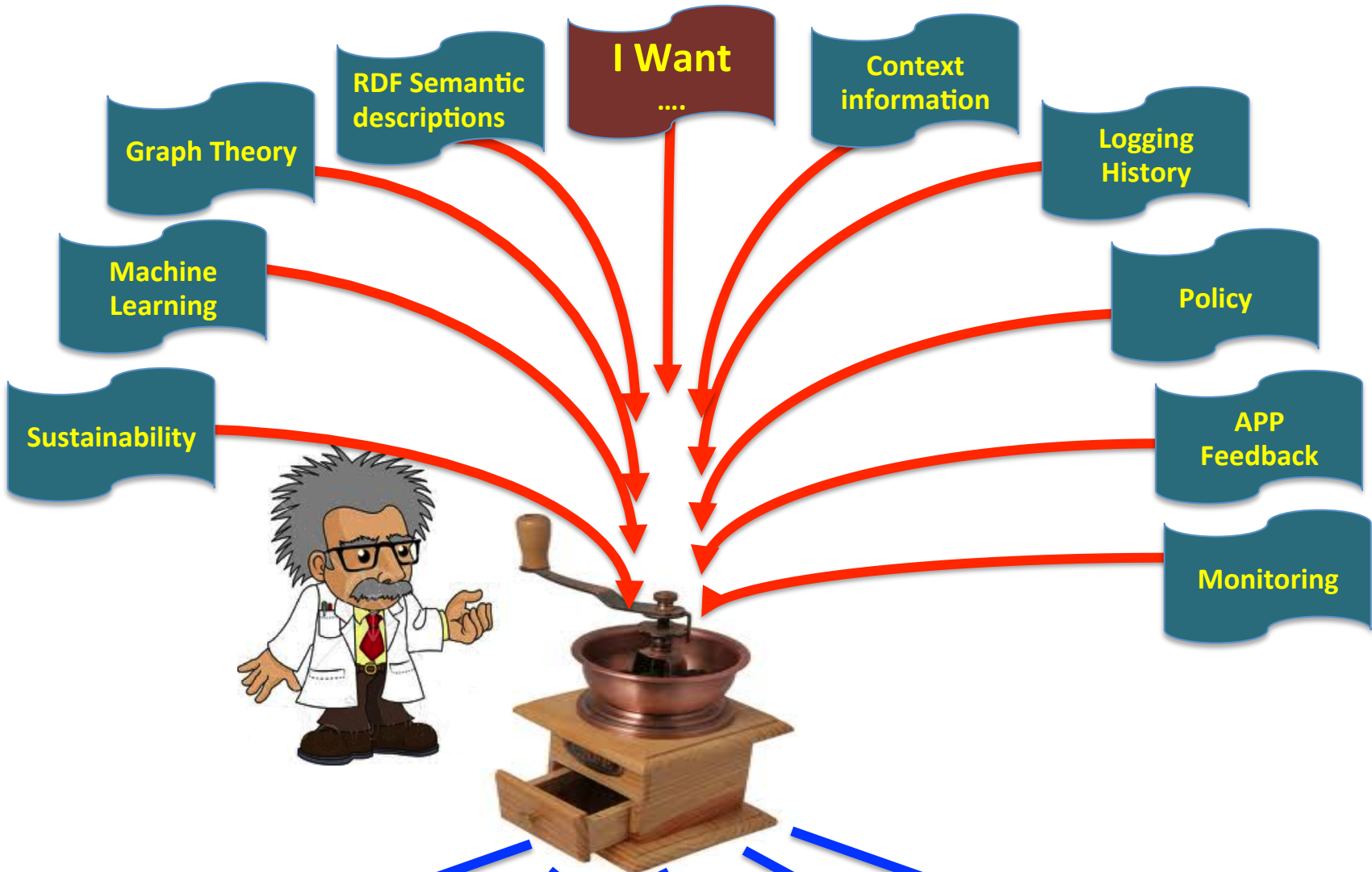
# The Ten Problems with the Internet

- 1. Energy Efficient Communication**
2. Separation of Identity and Address
3. Location Awareness
- 4. Explicit Support for Client-Server Traffic and Distributed Services**
5. Person-to-Person Communication
6. Security
- 7. Control, Management, and Data Plane separation**
- 8. Isolation**
9. Symmetric/Asymmetric Protocols
- 10. Quality of Service**

*Nice to have:*

- Global Routing with Local Control of Naming and Addressing
- **Real Time Services**
- **Cross-Layer Communication**
- Multicast
- Receiver Control
- Support for Data Aggregation and Transformation
- **Support for Streaming Data**
- **Virtualization**

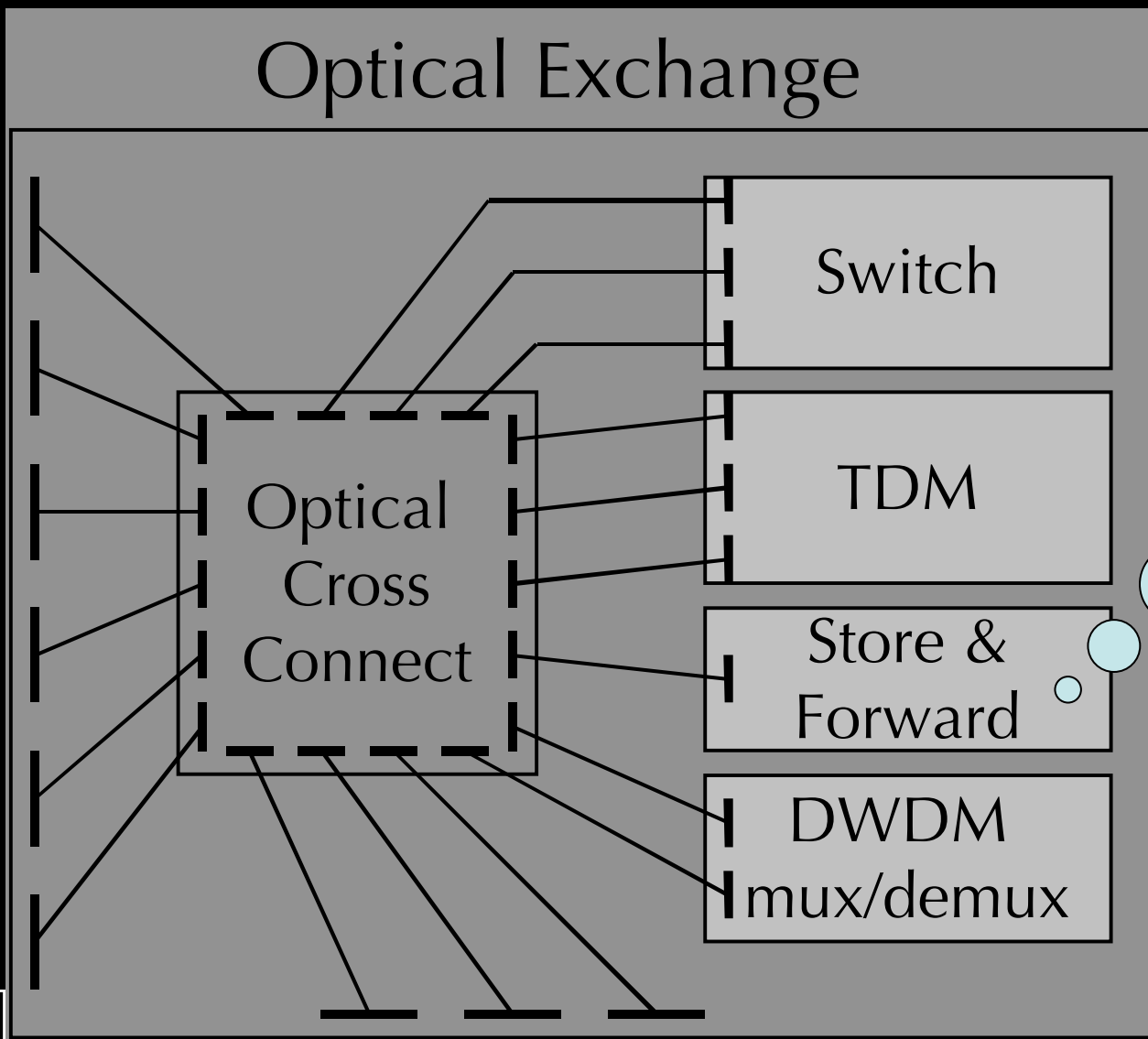




# ECO-Scheduling



# Optical Exchange as Black Box



TeraByte  
Email  
Service



# Links

- <http://ext.delaat.net/>
- <http://ext.delaat.net/smartgreen/index.html>
- [http://ext.delaat.net/news/2012-03-23/  
index.html](http://ext.delaat.net/news/2012-03-23/index.html)



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