Trusted Sharing of Big Data Assets in Cooperative Working Groups

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PACIFIC RESEARCH PLATFORM

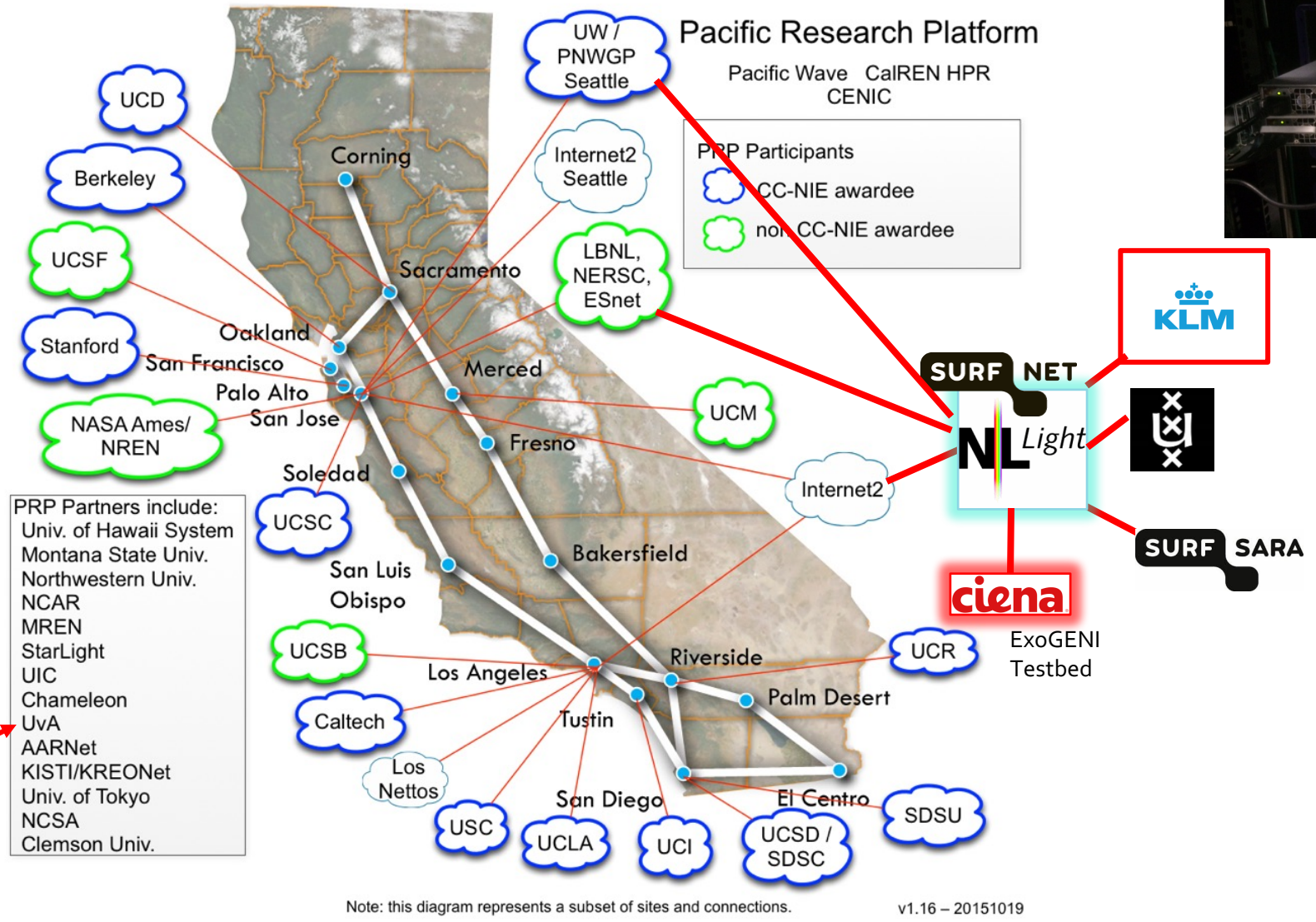
System and Network Engineering

AIR FRANCE KLM

UvA/KLM and Pacific Research Platform Testbed

Research goal:
Explore value of academic network research enabling big data sharing

Thanks to UvA, SURFnet and Ciena



Problem: Big Data Sharing in B2B environments

Sharing Big Data Assets needs:

Clearly defined and agreed common benefit

Established common rules governing use, access **AND** benefit sharing.

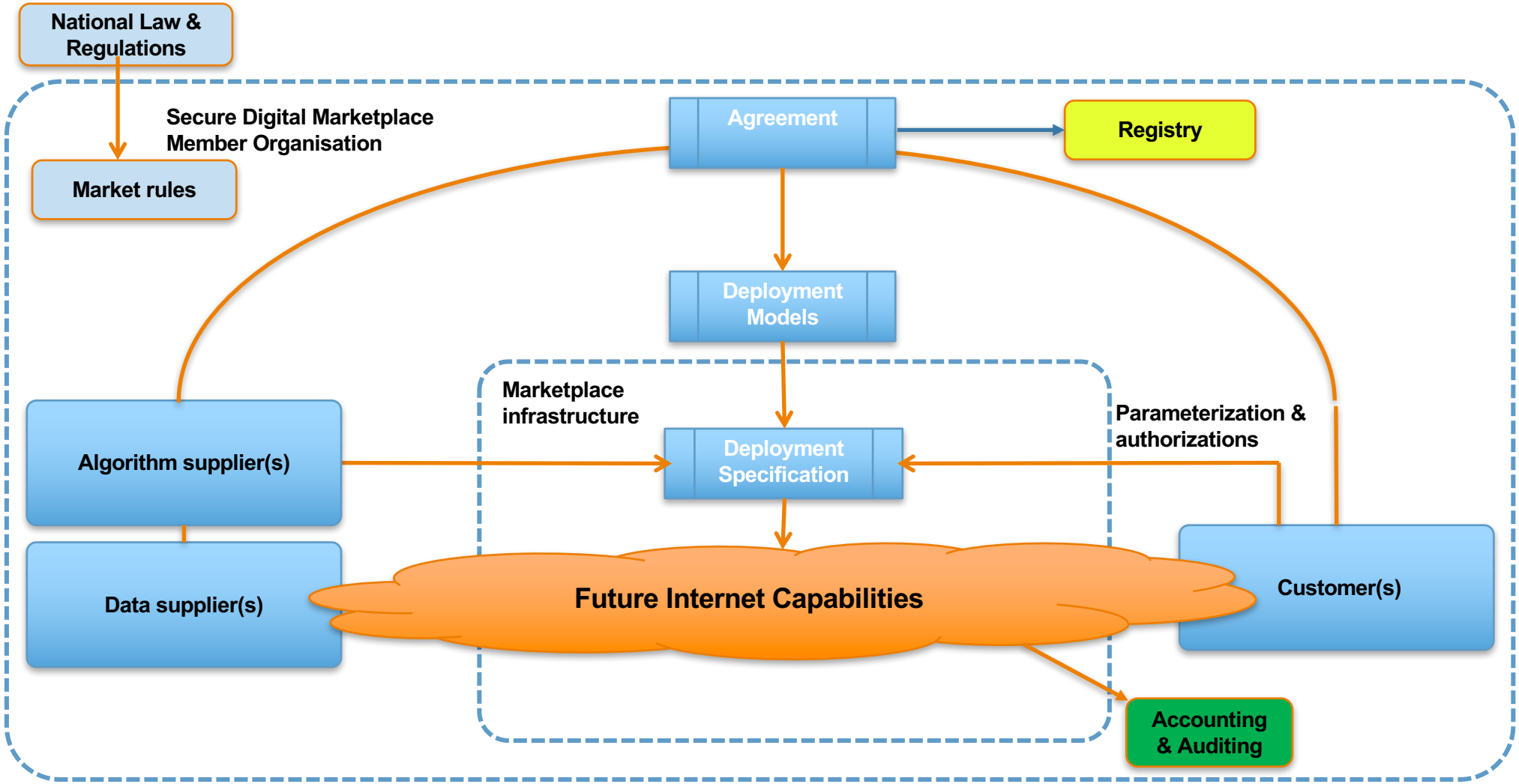
Organizing trust amongst group members as means to reduce risk

Infrastructure supporting implementation of trust

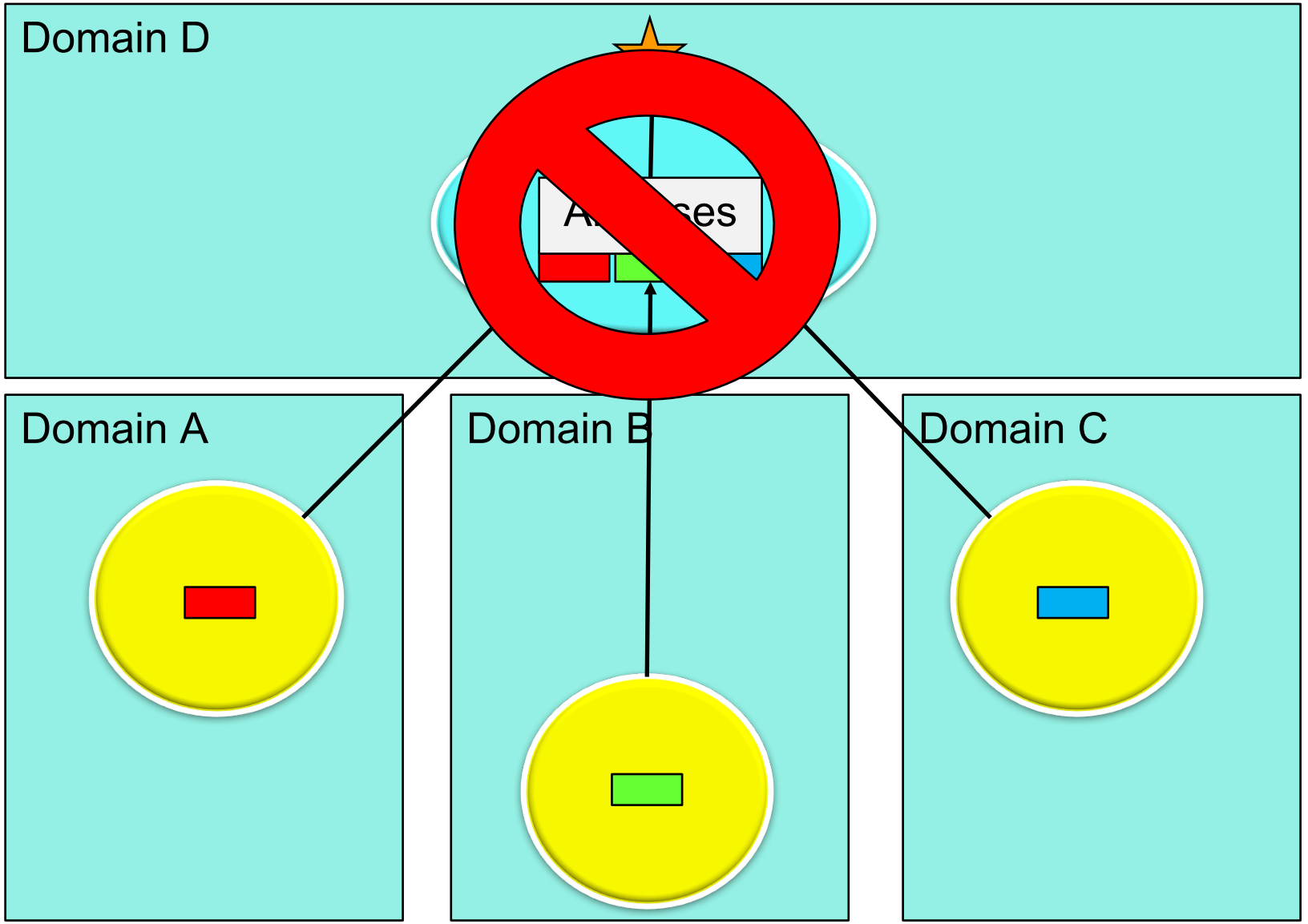
Secure Digital Market Place allowing community members to share data according to market rules.

- Digital Market Place (DMP) is a member organization as **independent legal entity.**
- Goal of the DMP is to **organize trust between members** wanting to gain a particular common benefit no single member can gain on its own.
- Members of the DMP can be a supplier or consumer of data or both.
- All members have **equal rights** within a DMP
- DMP is **governed by a board of members** in which all members participate
- DMP establishes a regulation consisting of **market rules and the admission requirements**
- DMP appoints a **market master** in charge of market operations
- DMP establishes a regulation for **conflict** settlement
- DMP appoints an **adjudication committee**
- Members can obtain rights (licenses) from the DMP within the framework of the DMP regulation to act in a particular defined market role.
- What elements of the DMP can be digitized?

Secure Digital Market Place architectural sketch

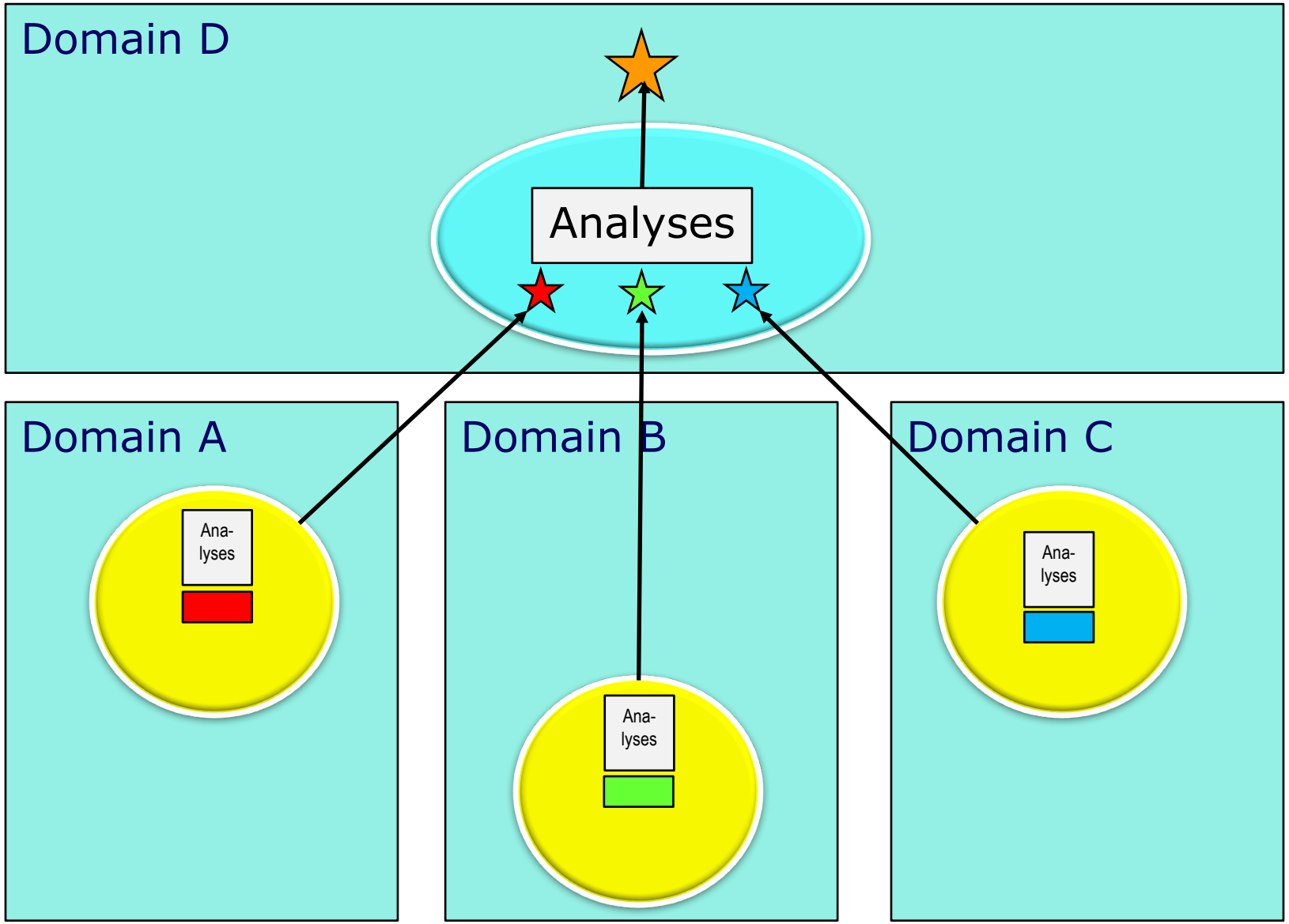


Traditional Data Sharing model.

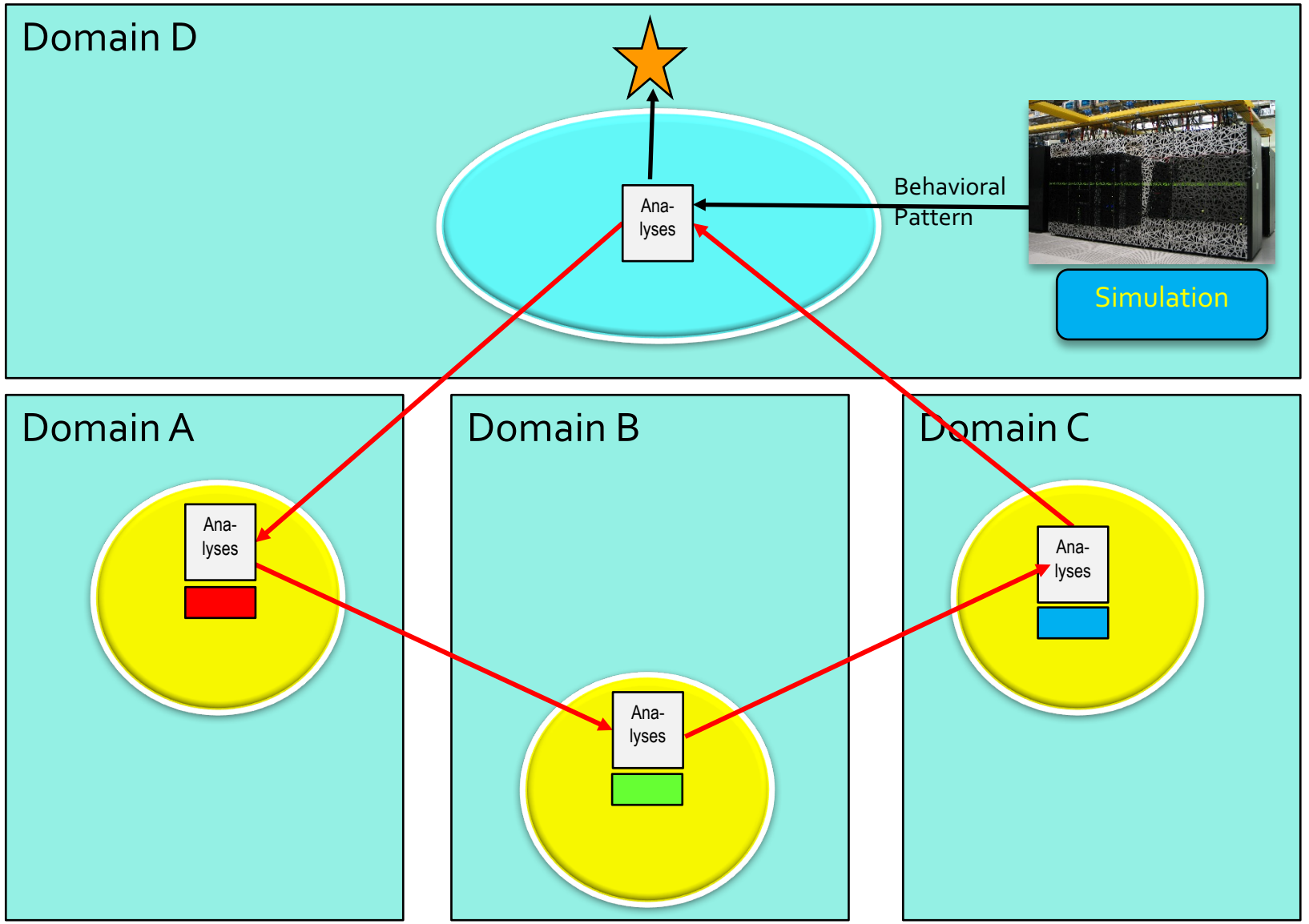


Domain = Autonomous Organization with own administration and enforcement

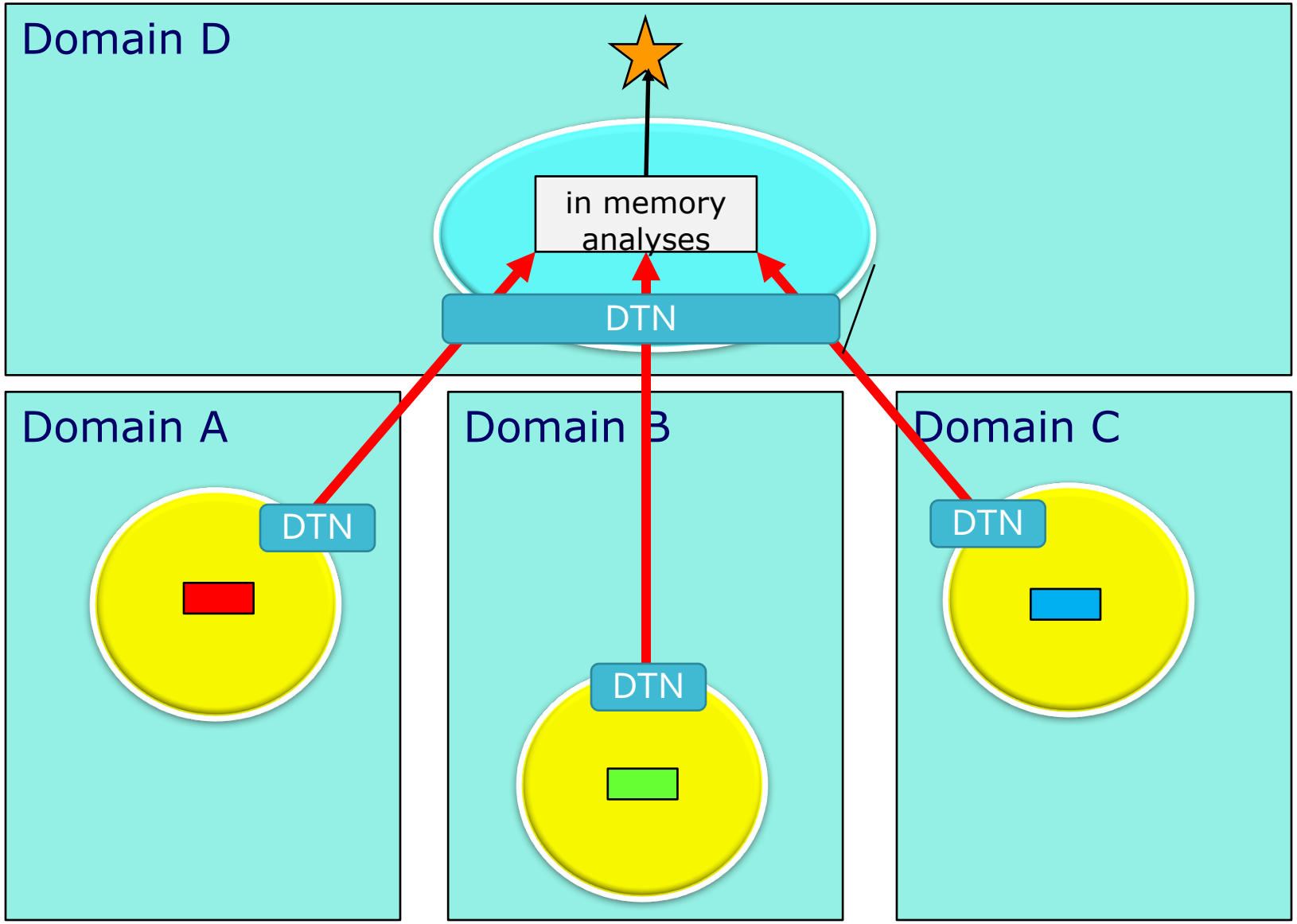
Bring processing to the data.



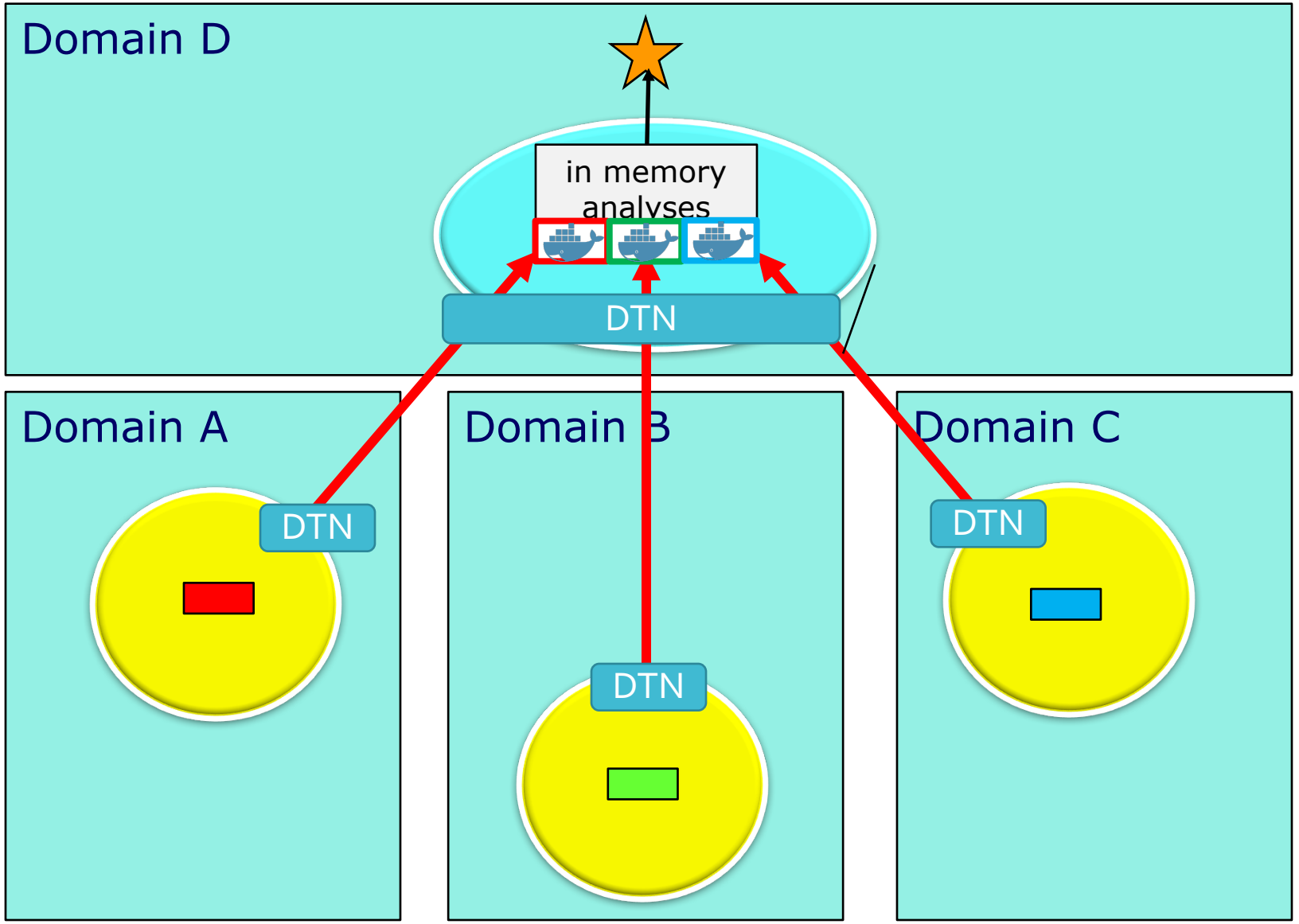
Turntable to perform pattern searches



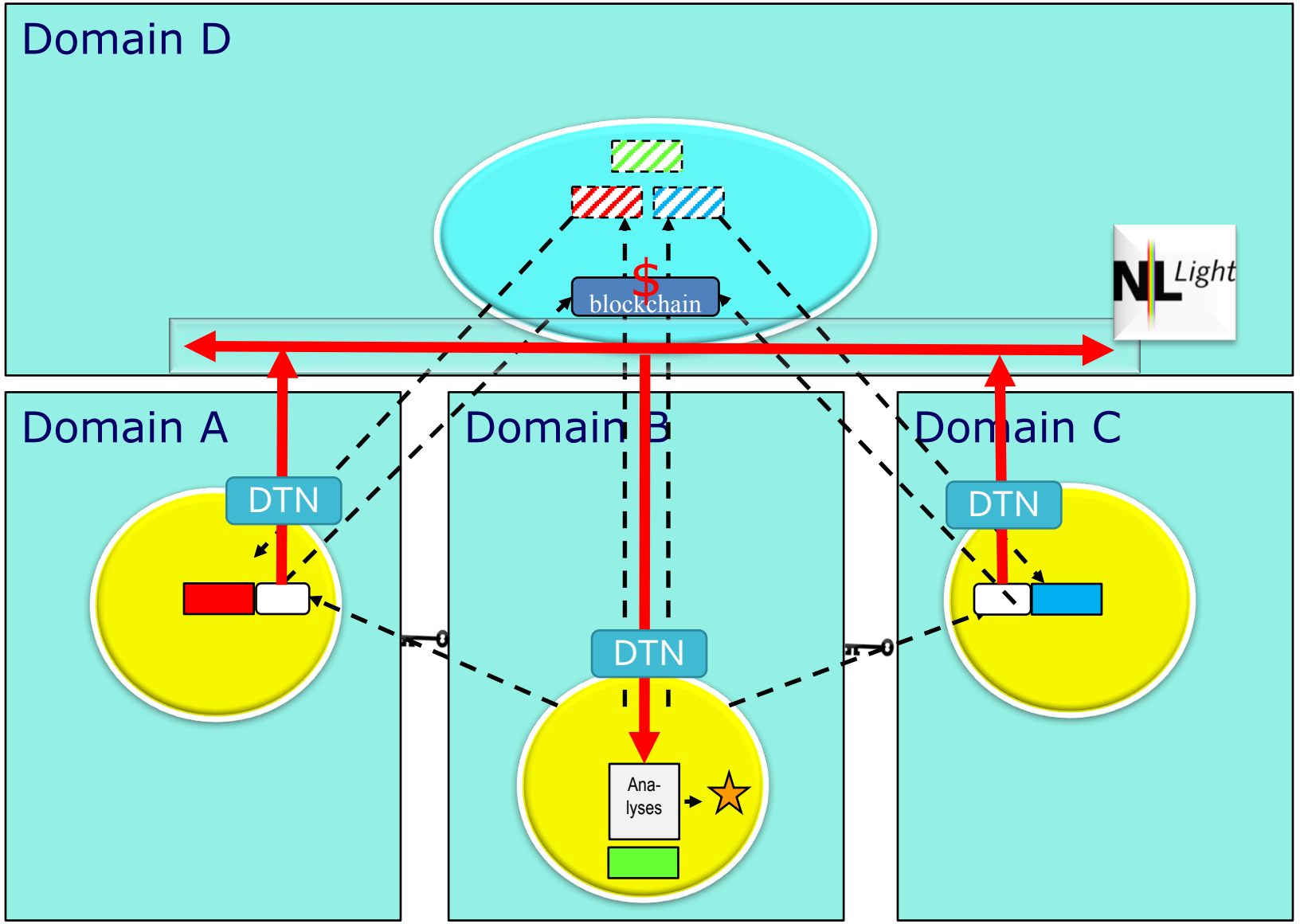
Separating data from compute via high performance links.



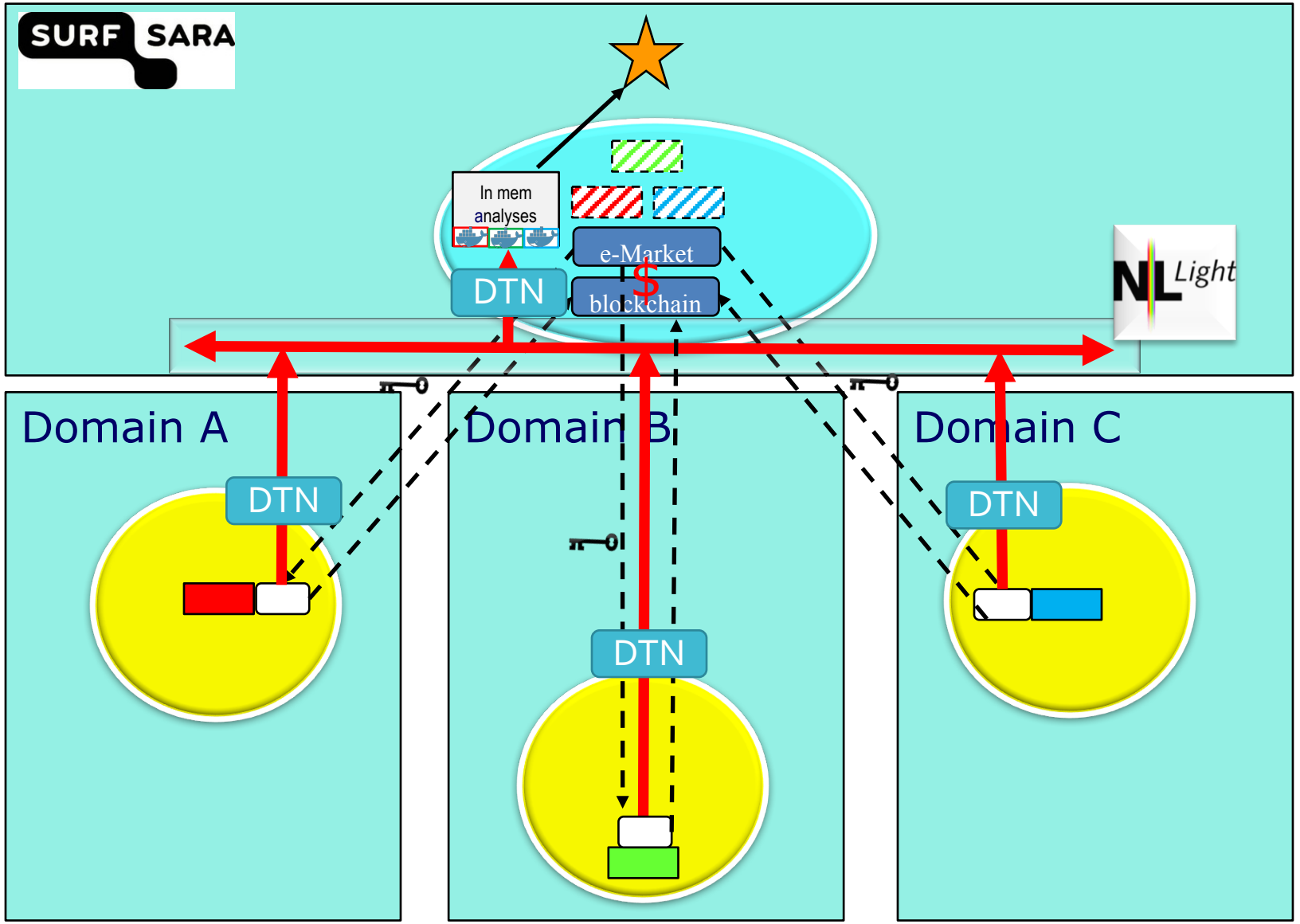
“Bring Your Own Container” reading its data via a HP links.



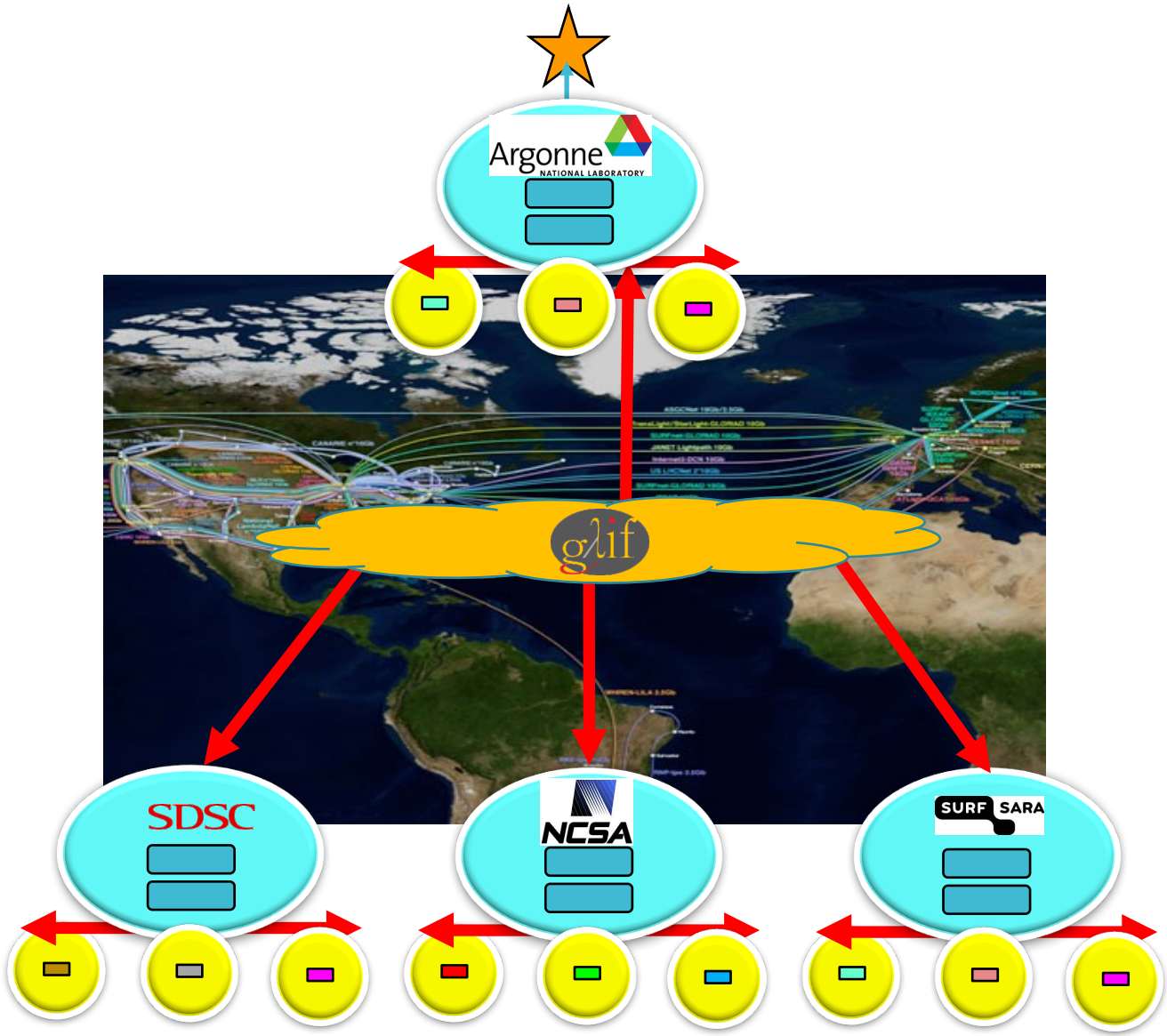
Data sharing using lightpath hub and access control



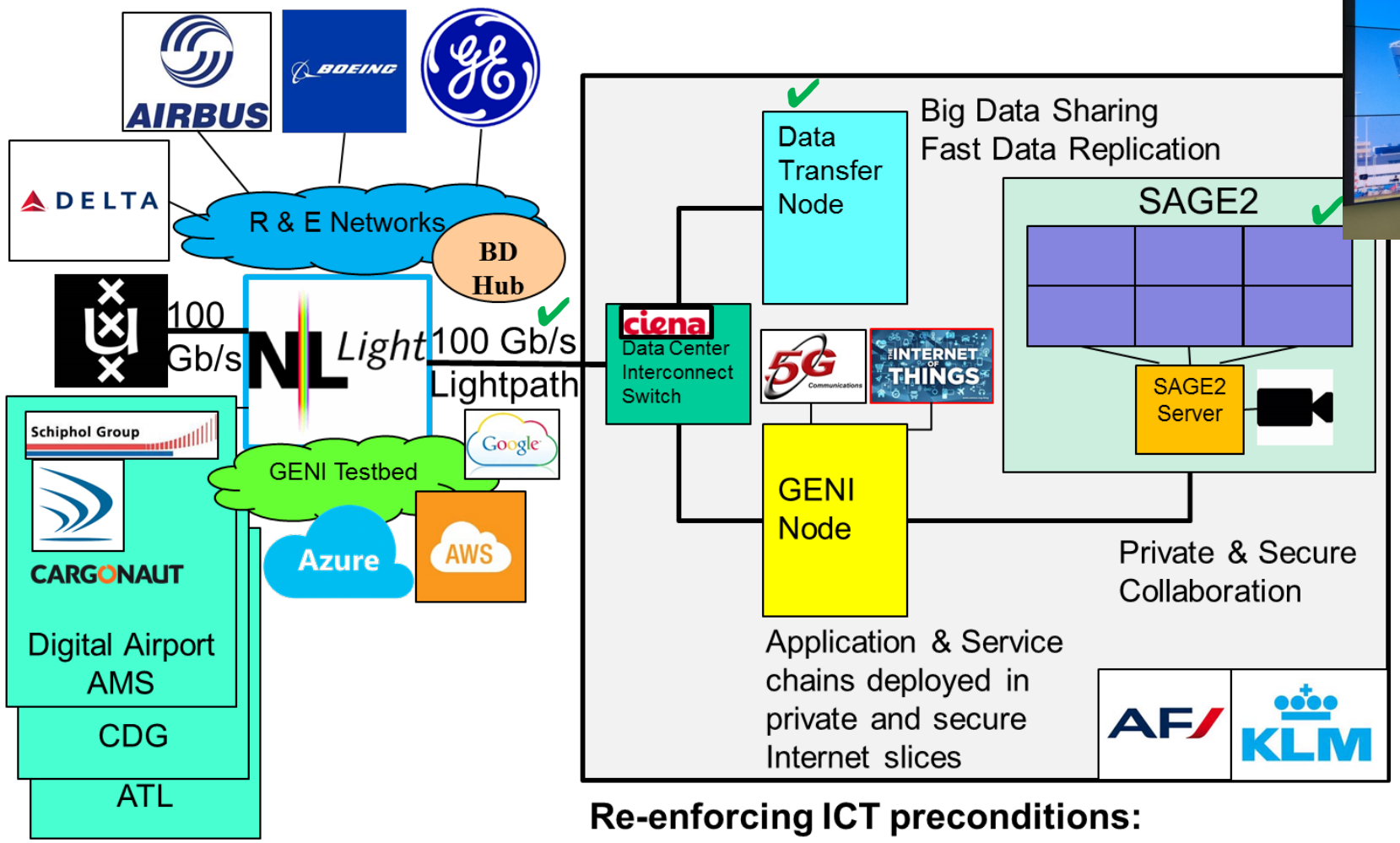
Digital Market Place model.



Experiments at global scale using existing e-Infrastructure



Ambition: AF/KL Future Internet Field Lab



Re-enforcing ICT preconditions:
Each envisaged site has similar elements

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