

LHC-OPN operations

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Introduction

- Summary of paper circulated mid – April
- Discuss all options
 - Distributed vs centralised help desk vs. centralised NOC
- Goal is to agree way forward, identifying points that need further work

Scope of the LHC-OPN



- Set of lightpaths that connect T0 to T1s and T1s to T1s
- Equipment (routers, switches) placed at the termination points of the lightpaths
- Excludes elements internal to T0 and T1s, excludes elements to connect T2s

Distributed operations

- Every entity involved in the LHC-OPN looks after it's own part.
 - Looks similar to current networking environment, in reality fundamentally different -> e2e lightpaths
- No single point of contact for fault reporting or troubleshooting
- No harmonisation of TTs
- Very complex to co-ordinate information flow and actions
- Probably *not* the way forward



- Who is going to have a complete overview of this setup ?
- Who will be able to pinpoint a fault ?
- How would fault fixing and reporting be co-ordinated ?

- Points towards centralised operations

Centralised approach



- Provides the opportunity for co-ordination of all operational activities related to LHC-OPN
- 2 models:
 - LHC help desk
 - LHC NOC

LHC help desk



- The help desk has RO access to T0 and T1 elements
- Monitors the LHC-OPN for faults
- Single point of contact for the LHC-OPN for configuration change requests (carried out by T0 or T1s)
- Contacts owners of elements (T0, T1s, NRENs, GEANT2) for fault resolution and change management
- Issues TTs

TBD for LHC help desk



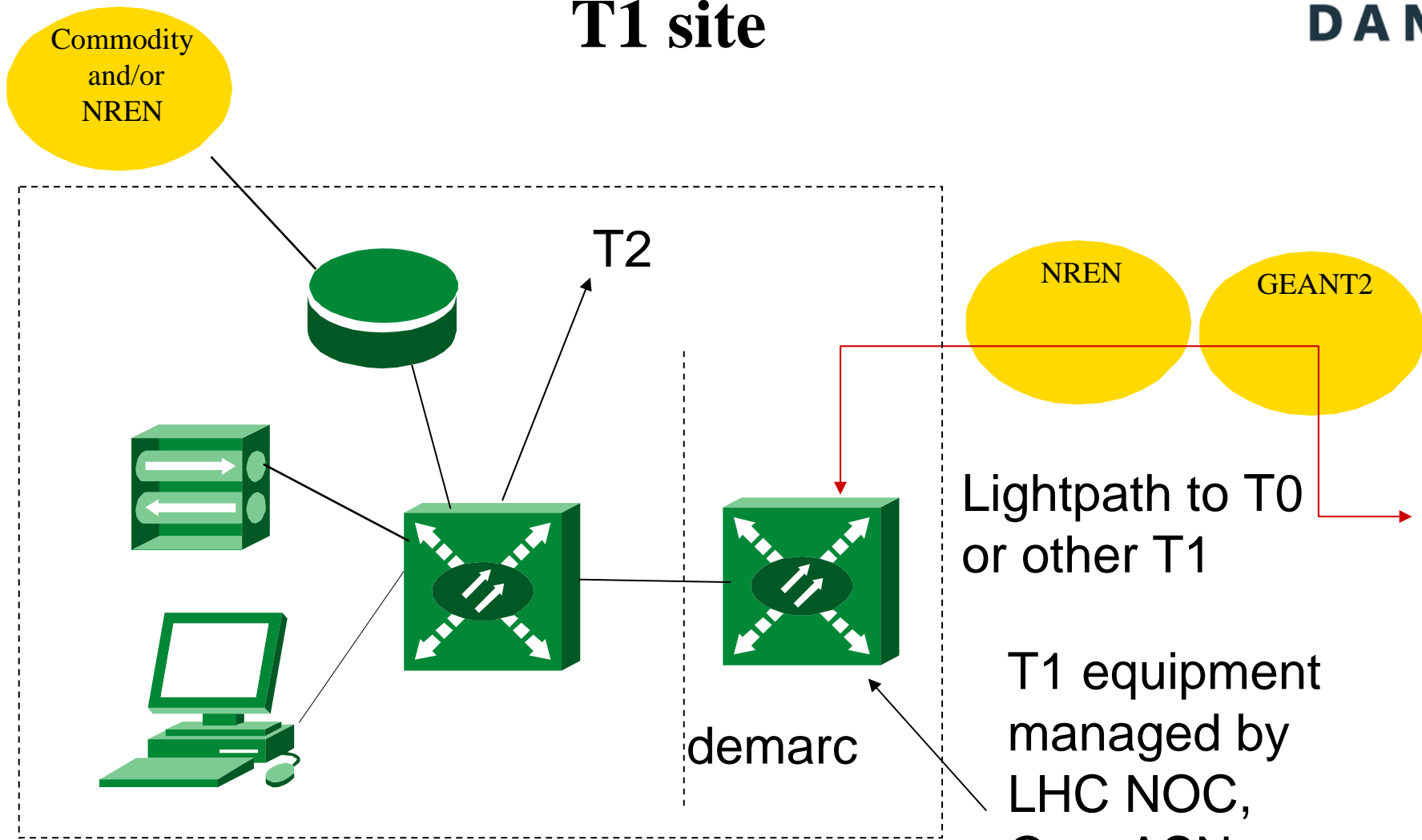
- Equipment at T0/T1 would do well to be harmonised
 - Difficult to achieve if T0 and T1s procure their own equipment
- Does not help with ASN, addressing and routing issues

LHC NOC



- Extension of help desk: in addition it carries out configuration of routers/switches forming the LHC-OPN
- Would require that equipment at T0 and T1s is of the same type. How would this be organised ?
- Needs separation of LHC-OPN equipment from internal equipment at T0 and T1s
 - Solves ASN, routing, addressing issues

T1 site



Lightpath to T0
or other T1

T1 equipment
managed by
LHC NOC,
Own ASN,
address space

Summary



- Distributed model unsuitable
- Centralised model provides better opportunity
- LHC help desk is a safe, comfortable option
- LHC NOC may appear more challenging at first, but with a long term view is worth serious consideration
 - Ample experience in Europe with GEANT
 - Solves ASN issues and routing issues