



Enabling Grids for E-scienceE

# WLCG relationships Status and plans

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SA2 All hands meeting, Roma, 2009-03-27*

[www.eu-egee.org](http://www.eu-egee.org)



**eNOC**

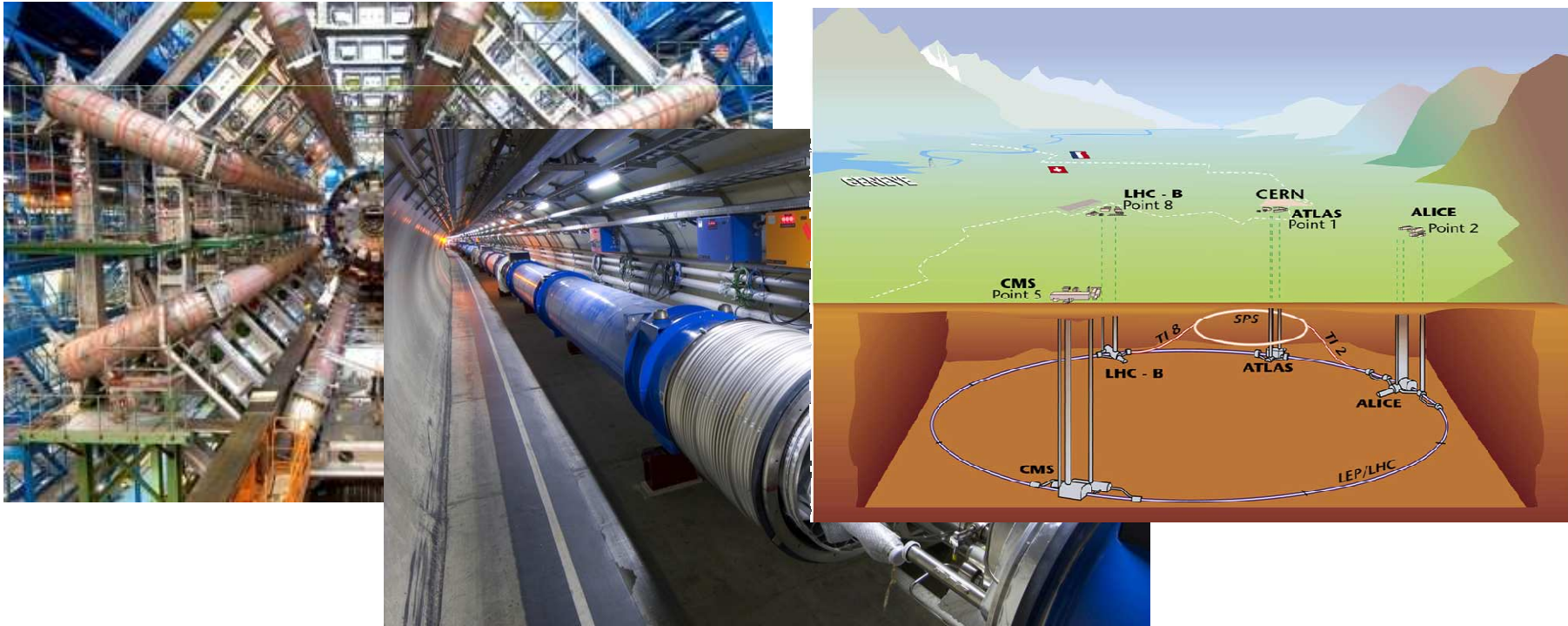
e-infrastructure



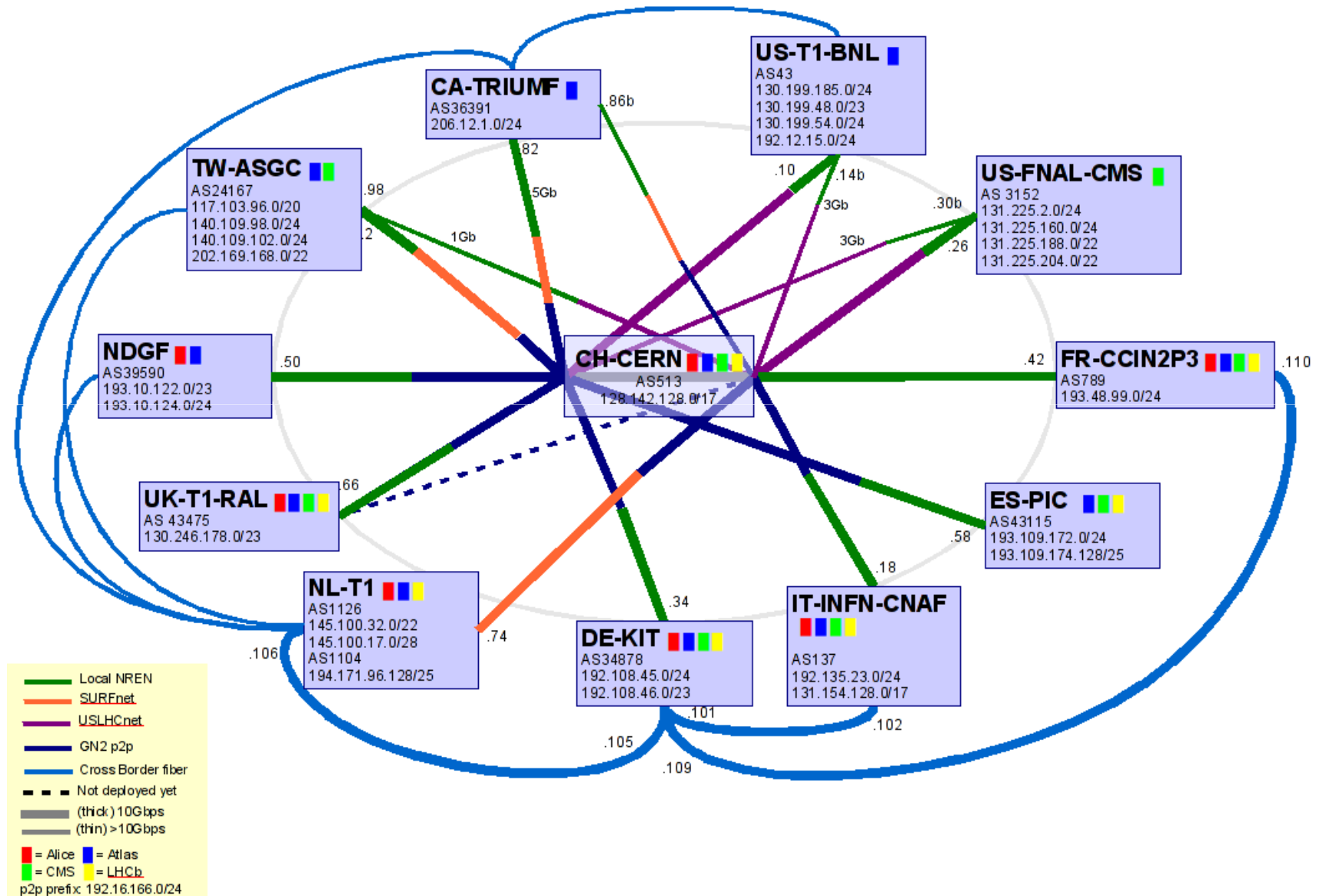
- **WLCG**
- **SA2 activities in this context**
- **LHCOPN**
- **Monitoring: 2008 service assessment of the network**
- **Main work done around the LHCOPN**
  - **Operational model**
    - Foundations, structures and supporting tools
    - Grid interactions
    - Status and roadmap
- **Matching EGI vision**
- **Ongoing work**

## WLCG: Worldwide Large Hadron Collider Computing Grid

- Goal: Analysing LHC data – 15 PB/year
- Federating several international Grid projects into achieving that
  - EGEE, OSG...
  - Tiers model: 1 T0 - 11 T1s - 50 T2s

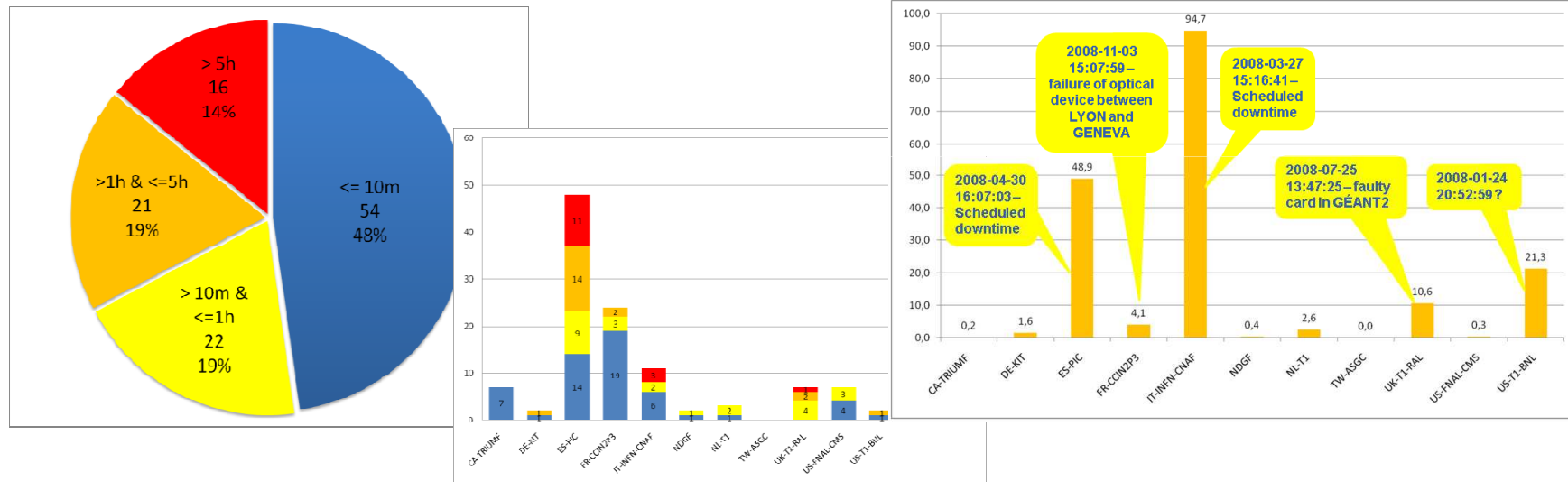


- **WLCG relationships really focused on LHCOPN support**
  - Aiming to sustain T0/T1 traffic
  
- **Other WLCG areas of interest for us seems no longer active**
  - Standardisation of monitoring data exchanges
    - ENOC's output still compliant and not changed



Courtesy of Edoardo Martelli – CERN – 2009-01-30

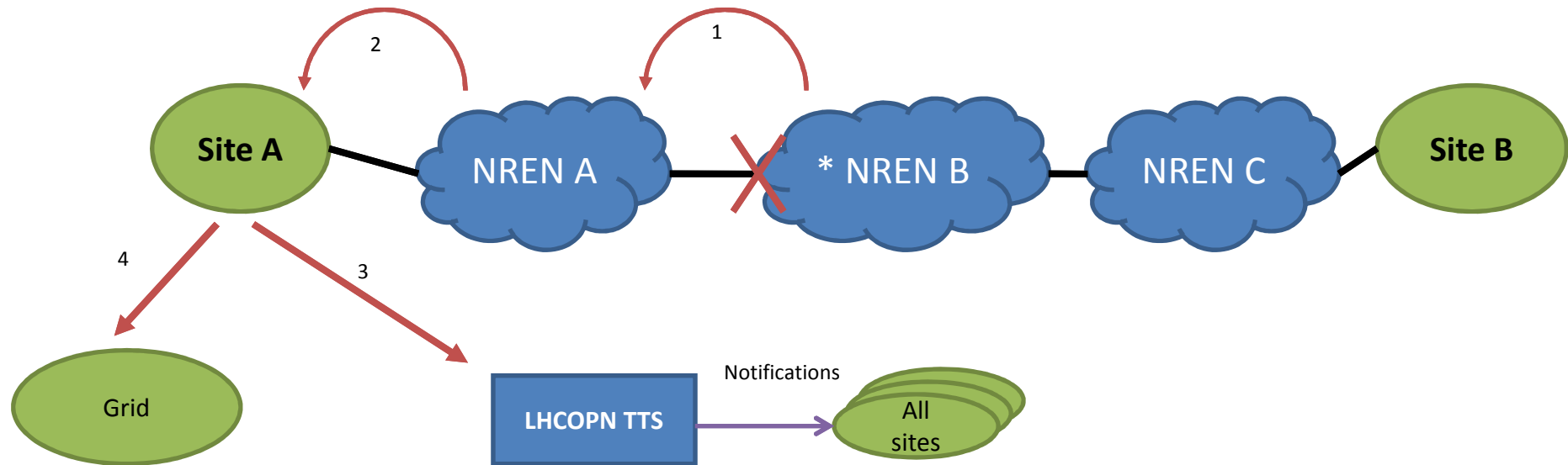
- Service assessment of the LHCOPN during 2008 done on January's LHCOPN meeting
  - Using ENOC's tools and data
  - <http://indico.cern.ch/materialDisplay.py?subContId=1&contribId=8&materialId=slides&confId=46765>



- Conclusion: Infrastructure behaves correctly but really awaiting a strong operational model...
  - Scheduled downtimes not correctly handled

- **SA2 leading operational working group**
  - 11 people: 1 NREN, 5 sites, DANTE, EGEE
- **4 operational meetings at CERN**
  - 2008-09-09, 2008-10-09, 2008-12-11, 2009-04-16
- **Attendance and reporting to quarterly LHCOPN meetings**
- **Report on Grid meetings**
  - GDB and WLCG meeting



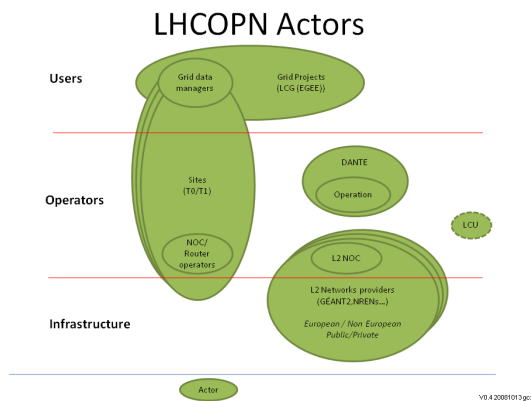


- Delay and reliability of the propagation
- + The way it currently works!



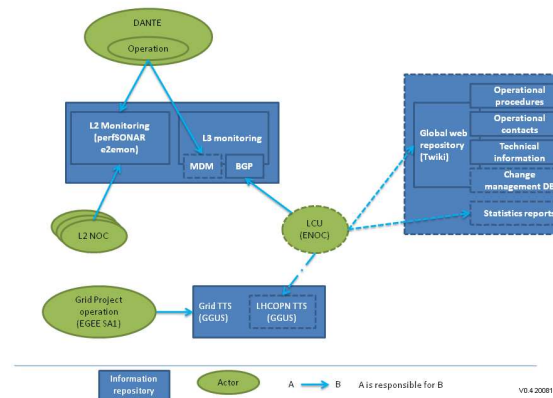
- **Federated model with key responsibilities on sites**
  - Interaction with network providers
  - Management of network devices on sites
  - Interaction with the Grid
- **Information centralised: TTS & Twiki**
  - Serialize, track and advertise trouble management
  - Contacts, technical details, etc.

- **Foundation**
  - Actors
  - Information repository management
  - Information access



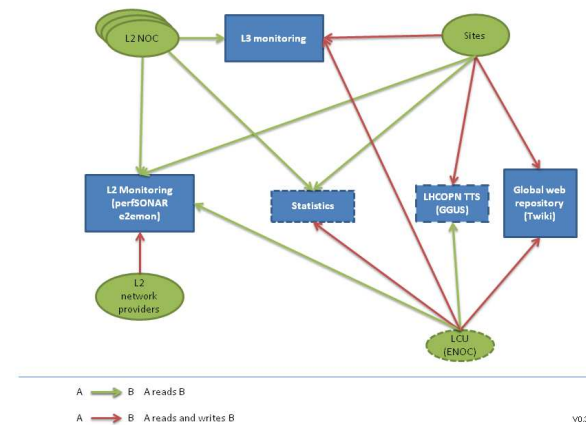
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Actors and information repositories management



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Information access



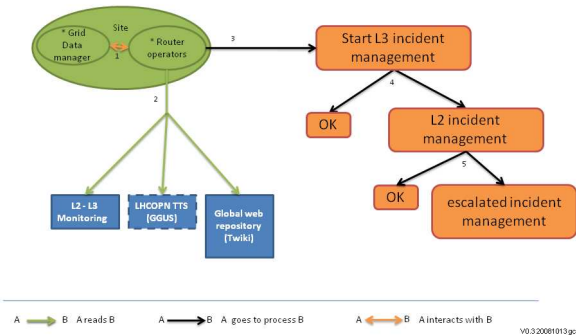
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Light flavor of ITIL

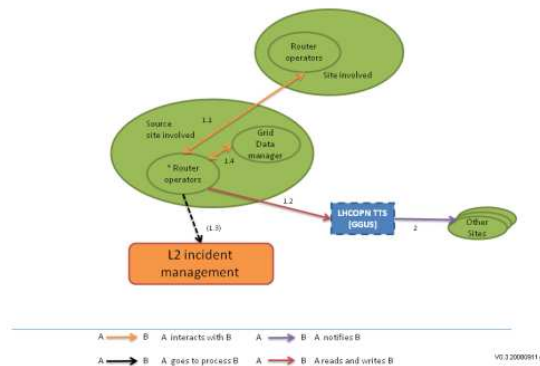
## Processes

- Incident management (L2, L3 and escalation process)
- Change management (L2, L3)
- Maintenance management (L2, L3)

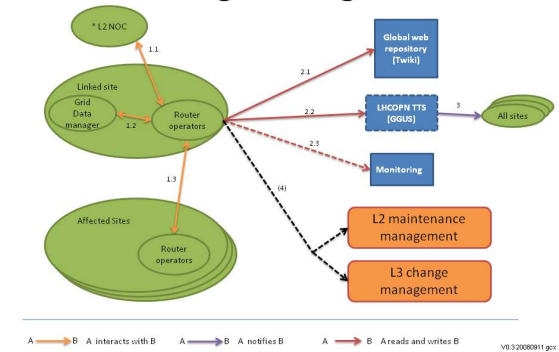
Problem management process



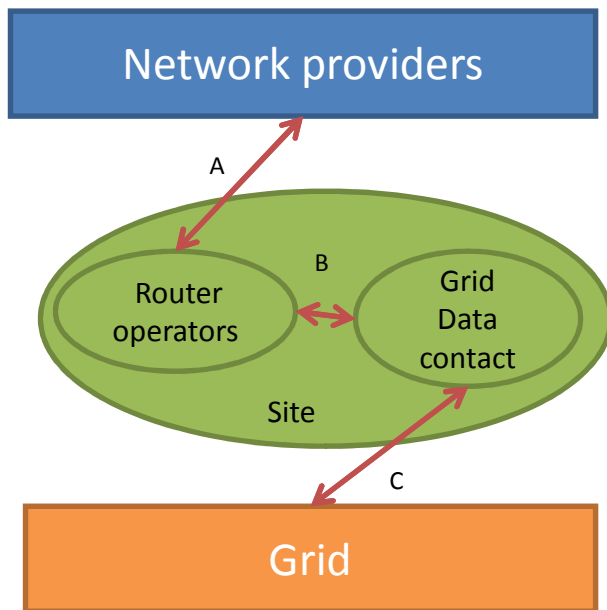
L3 Incident management process



L2 Change Management

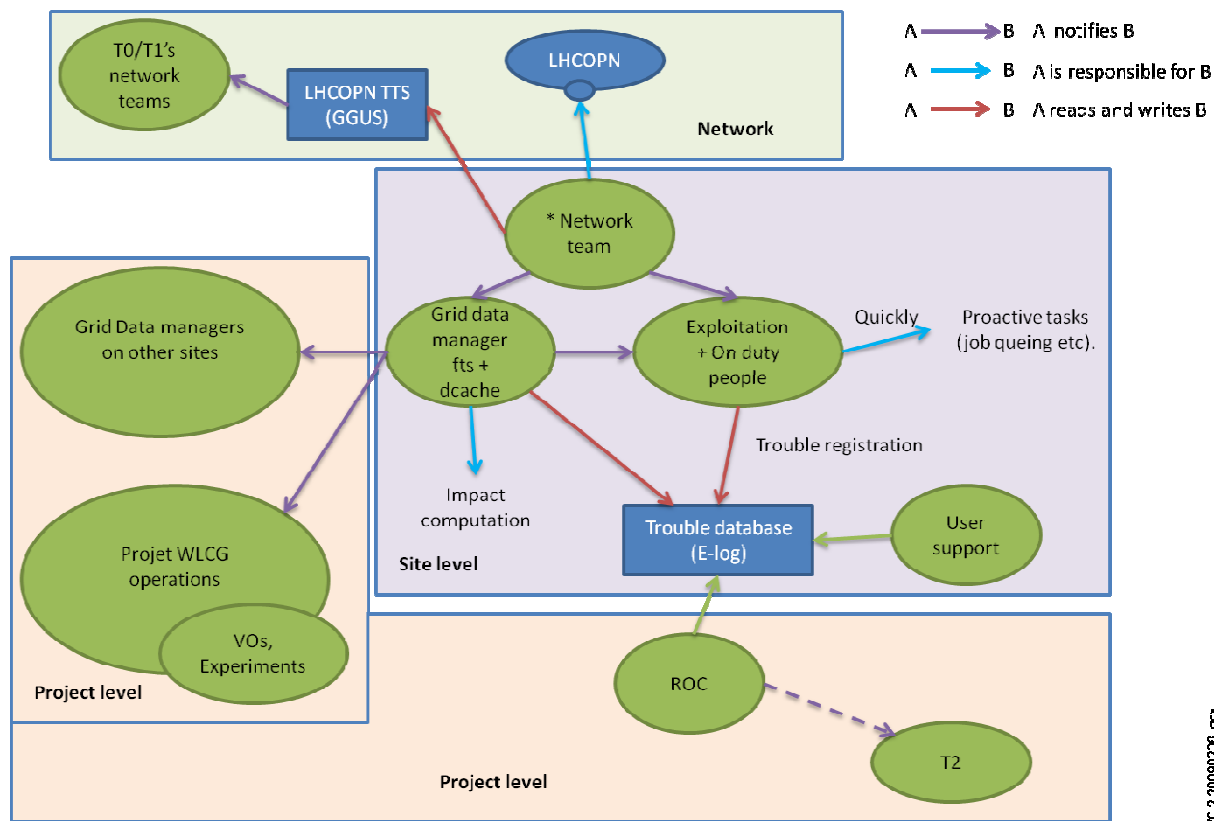


General concept:



**Service view needed**  
**Link to project/users**

Sample IN2P3-CC's implementation:



- **Trouble ticket system**

- GGUS helpdesk: <https://ggus.org/lhcopn>
  - Developed by EGEE-SA1 – KIT
- Planning: <https://ccenoc.in2p3.fr/LHCOPN/webcalendar/>

All LHCOPN tickets in GGUS database

ID	Status	Prob Start	Prob End	Category	Problem	Assigned to	LinkID	Imp Sitename	Info
30547	assigned	2009-01-16 02:01	2009-01-19 05:01	MIL2	Connect	ES-PIC	CERN-PIC-LHCOPN-001	CH-CERN ES-PIC	Albura's L2 maintenance on January 16th from 02:00 to 05:00
30543	assigned	2008-12-18 02:12	2008-12-18 02:12	IL3	Perf	NDGF	IT-INFN-CNAF-MIL-BOL-LHCOPN-001 TW-ASGC-AMS-TPE-LHCOPN-001 TW-ASGC-AMS-CH-LHCOPN-001	NDGF	test 52
30542	assigned	2008-12-18 01:12	2008-12-18 06:12	IL2	Mon	UK-T1-RAL	GRIDKA-INDP3-LHCOPN-001 GRIDKA-SARA-LHCOPN-001 IT-INFN-CNAF-MIL-BOL-LHCOPN-001	FR-CCIN2P3 UK-T1-RAL US-FNAL-CMS	test submit notif on solution
30541	resolved	2008-12-18 01:12	2008-12-19 03:12	IL2	Other	FR-CCIN2P3	CERN-ASGC-LHCOPN-001	FR-CCIN2P3 NDGF UK-T1-RAL	test notif on every change
30521	resolved	2008-12-15 01:12	2008-12-15 01:12	IL3	Connect	DE-KIT	GRIDKA-SARA-LHCOPN-001	DE-KIT NL-T1	Another test from NI-T1, we lost connectivity to DE-KIT
30520	resolved	2008-12-15 10:12	2008-12-15 02:12	IL3	Connect	CH-CERN	CERN-SARA-LHCOPN-001	CH-CERN DE-KIT NDGF NL-T1	Test No IP connectivity from NI-T1 to CERN (test ticket in GGUS TT5)
30500	resolved	2008-12-11 04:12	N/A	IL2	Connect	ES-PIC	CERN-PIC-LHCOPN-001	CH-CERN ES-PIC	test problem to CH-CERN
30501	resolved	2008-12-10 10:12	N/A	IL2	Connect	CH-CERN	CERN-PIC-LHCOPN-001	ES-PIC	TEST - link down
30500	assigned	2008-12-10 09:12	N/A	IL2	Connect	CH-CERN	CERN-ASGC-LHCOPN-001		you more test

### LHCOPN Submit ticket

**User information**

Name: Guillaume Cessieux (FR-CCIN2P3) E-Mail: guillaume.cessieux@cc.in2p3.fr

CC to ?  Notification mode ?  on every change  on solution

include DANTE  ENOC

**Problem information**

Problem Start Date: 2009-03-24 / 14:11 UTC

Problem End Date: / / UTC

Ticket Category: Incident L2 Priority: less urgent

Short description (required):

Describe your problem providing the information listed here ?

Impacted sitenames  select all

CH-CERN  FR-CCIN2P3  TW-ASGC  CA-TRIUMF  IT-INFN-CNAF  UK-T1-RAL  DE-KIT  NDGF  US-FNAL-CMS  ES-PIC  NL-T1  US-T1-BNL

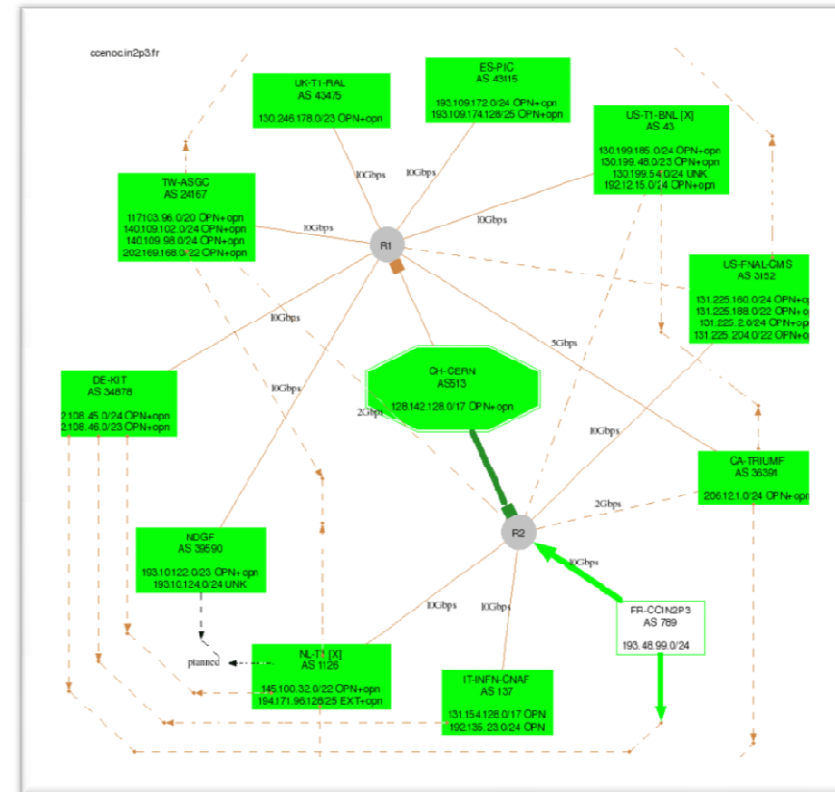
No notification to site

Link ID: n/a  
ASGC-FERMI-LHCOPN-001  
ASGC-SARA-LHCOPN-001 - 10G  
BNL-TRIUMF-LHCOPN-001 - 10G  
CERN-ASGC-LHCOPN-003 - P - 10G  
CERN-ASGC-LHCOPN-004 - B - 10G

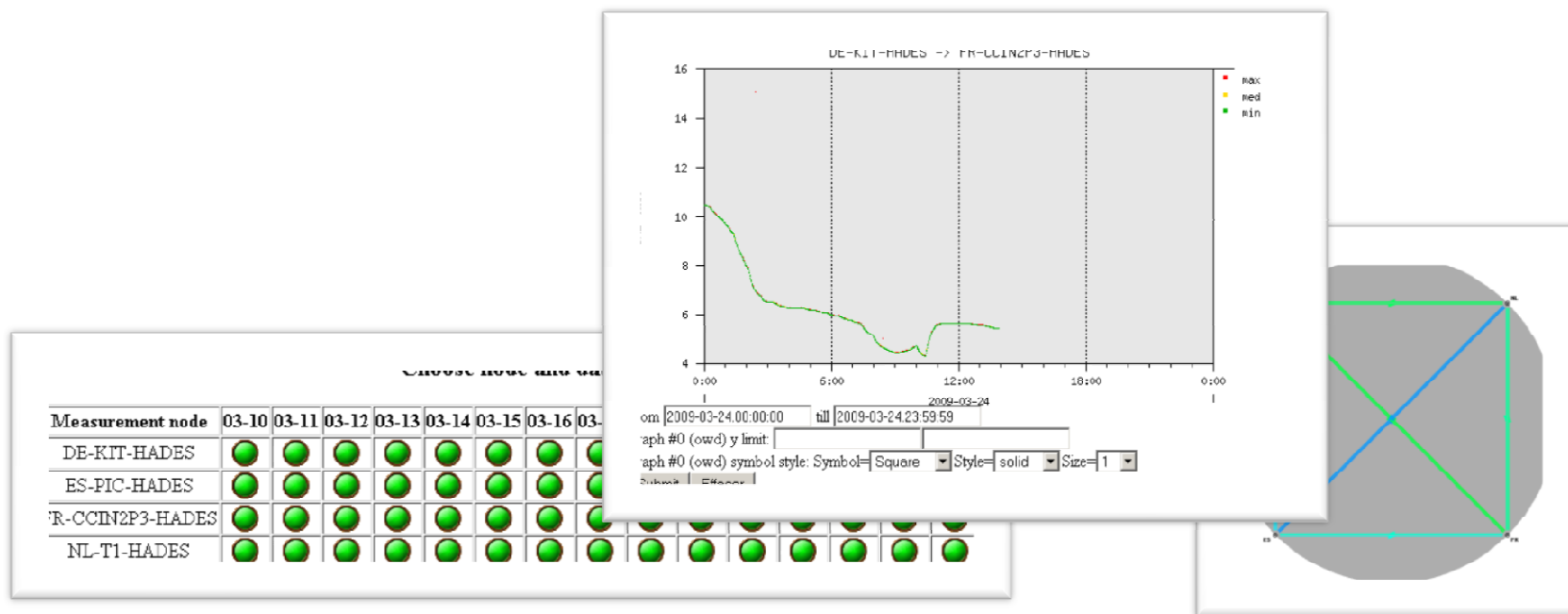
Type of network problem: Connectivity Assign it to: CH-CERN

Service Impacted: None service affecting

- **Monitoring**
  - ENOC's home made BGP monitoring tools
    - <https://ccenoc.in2p3.fr/ASPDrawing/>
    - Official for year 2009
    - Connectivity focused



- ENOC's monitoring will be replaced by upcoming PerfSONAR solution based on DANTE appliances
  - Active measurements: Bandwidth, delay etc.
  - To be in production in 2010
  - SA2 member of MDM feedback group to push and follow requirements





- **LHCOPN operational model released!**

- Proposed and **accepted** on 2008-10

<https://twiki.cern.ch/twiki/bin/view/LHCOPN/OperationalModel>

- Huge work around wisely documenting

- Everything on CERN's twiki

<https://twiki.cern.ch/twiki/bin/view/LHCOPN/>

- **Implementation started**

- 4 sites still in trial mode for operations

You are here: [TWiki](#) > [LHCOPN Web](#) > [WebHome](#)

## LHCOPN

**LHCOPN - Large Hadron Collider Optical Private Network**

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**Technical information**

- [Overall network maps \(L2, L3\)](#)
- [IP addresses](#)
- [Per site implementation details](#)
- [Naming convention and links' IDs](#)
- [Technical contacts](#)

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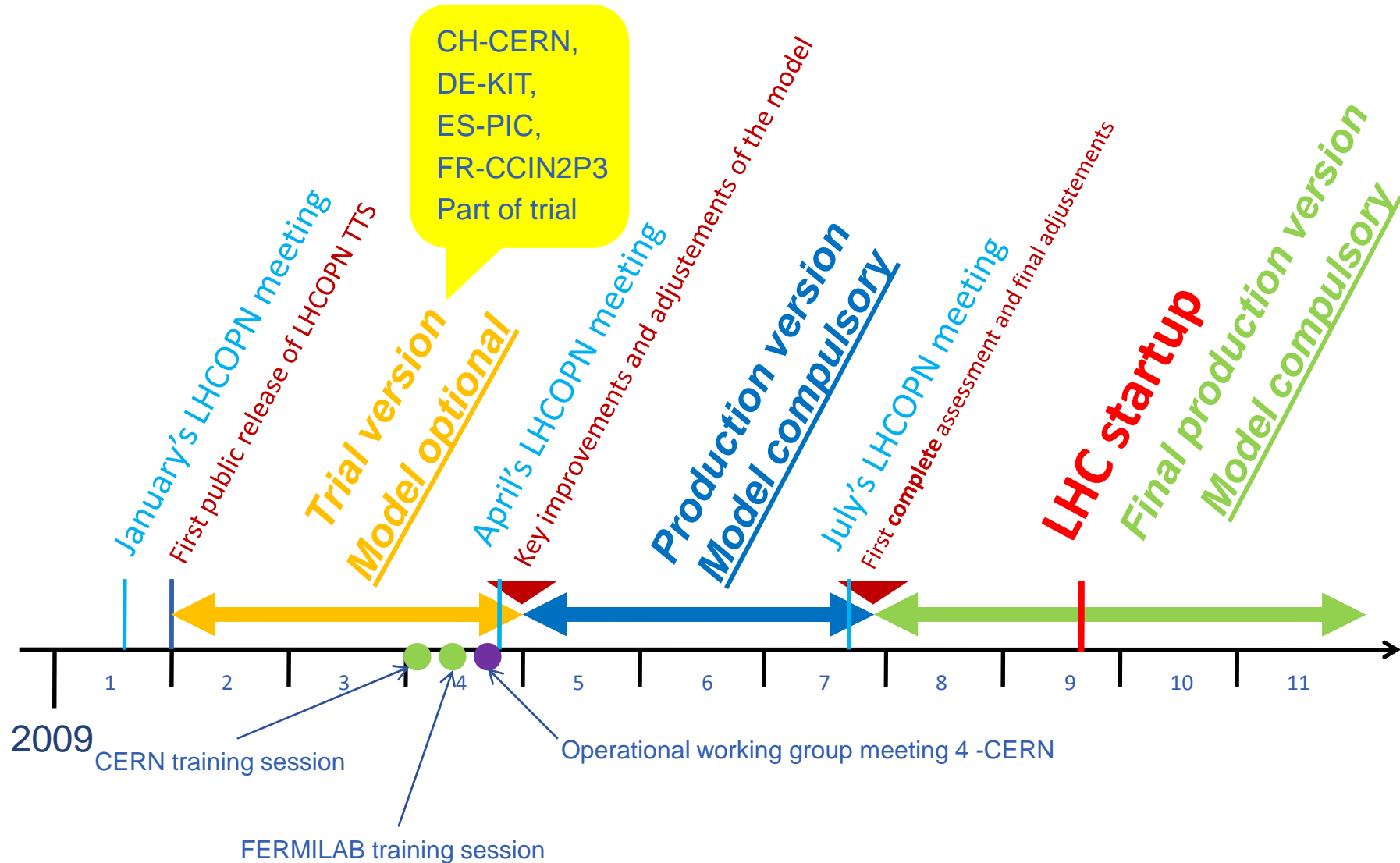
**Operations**

- [Proposed LHCOPN operational model](#)
- [Sample use cases of the operational model](#)
- [Proposed regular backup test process](#)
- [Contacts for operations](#)
- [Private twiki area for Operations \(TTS access, change management DB etc.\)](#) - Authentication required

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**Monitoring**

- [LHCOPN traffic statistics](#)
- [LHCOPN traffic statistics](#) - Old page
- Looking Glass from: [CH-CERN](#) (queries to R01LCG and R02LCG for the LHCOPN) - [FR-CCIN2P3](#) -



- **No active role for the ENOC in the operational model**
  - Federated with no need of central entities acting
  - We are more helping to design and set up processes and tools
  
- **Federated model with no central role**
  - Excepted quality assessment done by CERN !
  
- **This is really fitting with EGI spirit...**

- **Finalise implementation**
  - Demonstrate ops model is working!
    - Robustness to be particularly checked
  - Set up all quality indicators and reviewing processes
  - Maturate tools and processes
  - Target for production mode: 2009-08
  - Set up Grid interactions
  
- **Dissemination around the Ops model**
  - 2 presentations and trainings sessions foreseen
    - CERN and FERMILAB
  - Waiting things to be stabilised and feedbacks to do some publications
    - Invited at NORDUNET conference, 2009-09, on session « Federated operations »

- **Huge amount of work around LHCOPN operations**
  - Really fitting with SA2's role between Grid and networks
  - Required amount of work should be reduced soon
- **Seems quite successful**
  - Federated model really endorsed by actors
  - Implementation currently really going fine
    - We are on schedule – Yes sometime this occurs
- **LHCOPN operations targeting production mode on 2009-08**
  - Matching LHC startup
- **Monitoring « outsourced » to DANTE/GN2-3**

**Question/Comment?**