

Slow Control Architecture for Km3Net-Italy

Summary:

NEMO Phase2 analysis

Km3Net-Italy specification

The architecture

Conclusions

1 Tower, 9 floors

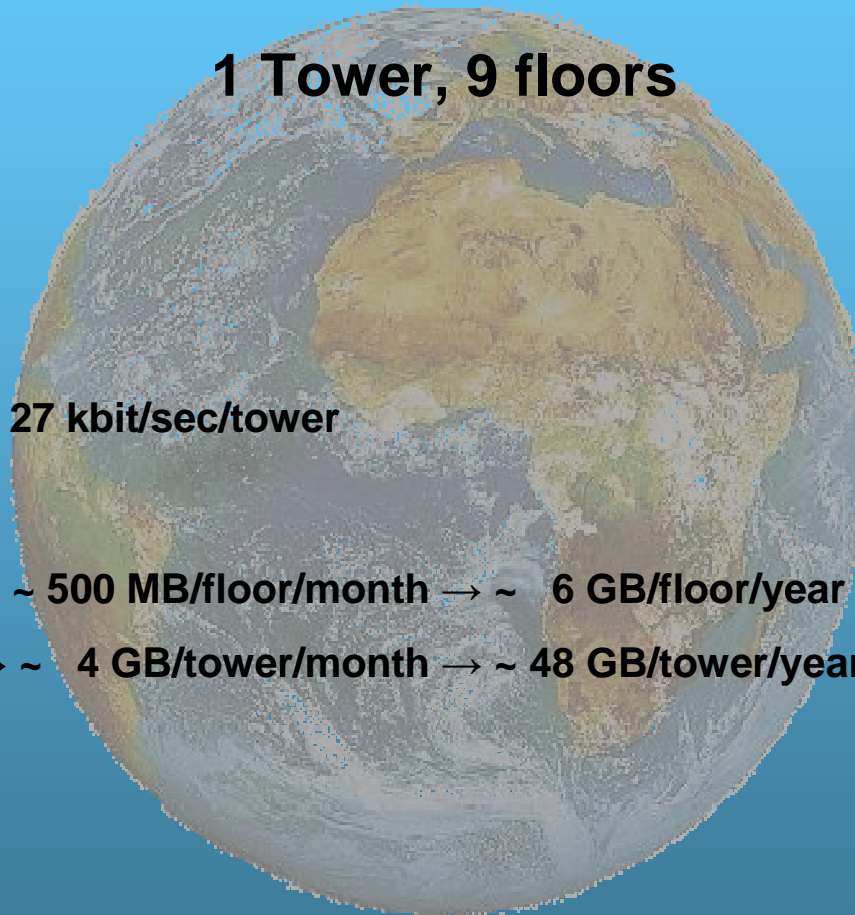
- **Throughput**

~ 3 kbit/sec/floor → ~ 27 kbit/sec/tower

- **DB Storage**

~ 17 MB/floor/day → ~ 500 MB/floor/month → ~ 6 GB/floor/year → < 120 GB/floor/20 years

~ 133 MB/tower/day → ~ 4 GB/tower/month → ~ 48 GB/tower/year → < 1 TB/tower/20 years



8 Towers, 15 floors

• Throughput

~ 4 kbit/sec/floor → ~ 60 kbit/sec/tower → ~ 480 kbit/sec/8 towers

• DB Storage

~ 22 MB/floor/day → ~ 667 MB/floor/month → ~ 8 GB/floor/year → < 160 GB/floor/20 years

~ 330 MB/tower/day → ~ 10 GB/tower/month → ~ 120 GB/tower/year → < 2.5 TB/tower/20 years

< 1 TB/8 towers/year → < 20 TB/8 towers/20 years

100 Towers, 15 floors

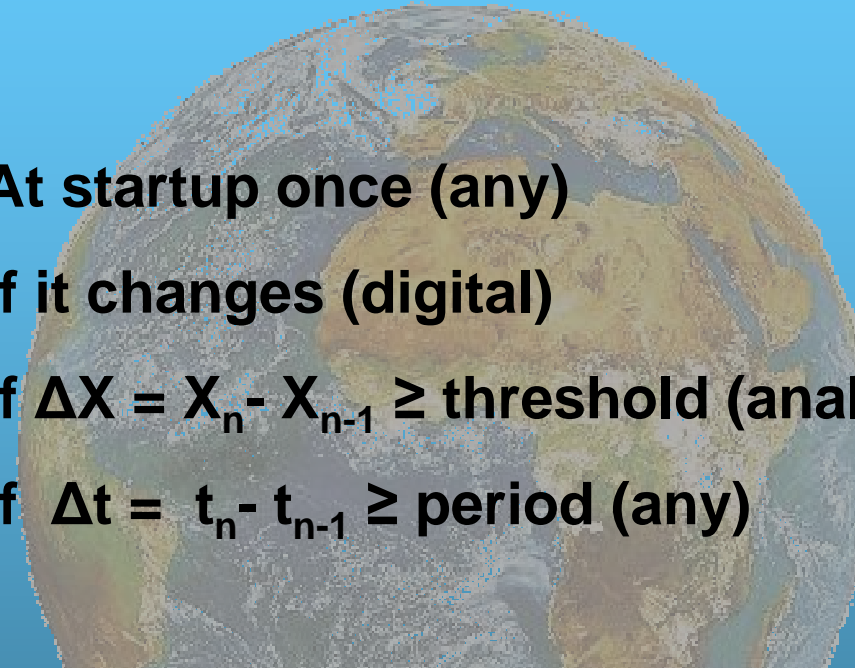
- **Throughput**

~ 4 kbit/sec/floor → ~ 60 kbit/sec/tower → ~ 6 Mbit/sec/100 towers

- **DB Storage**

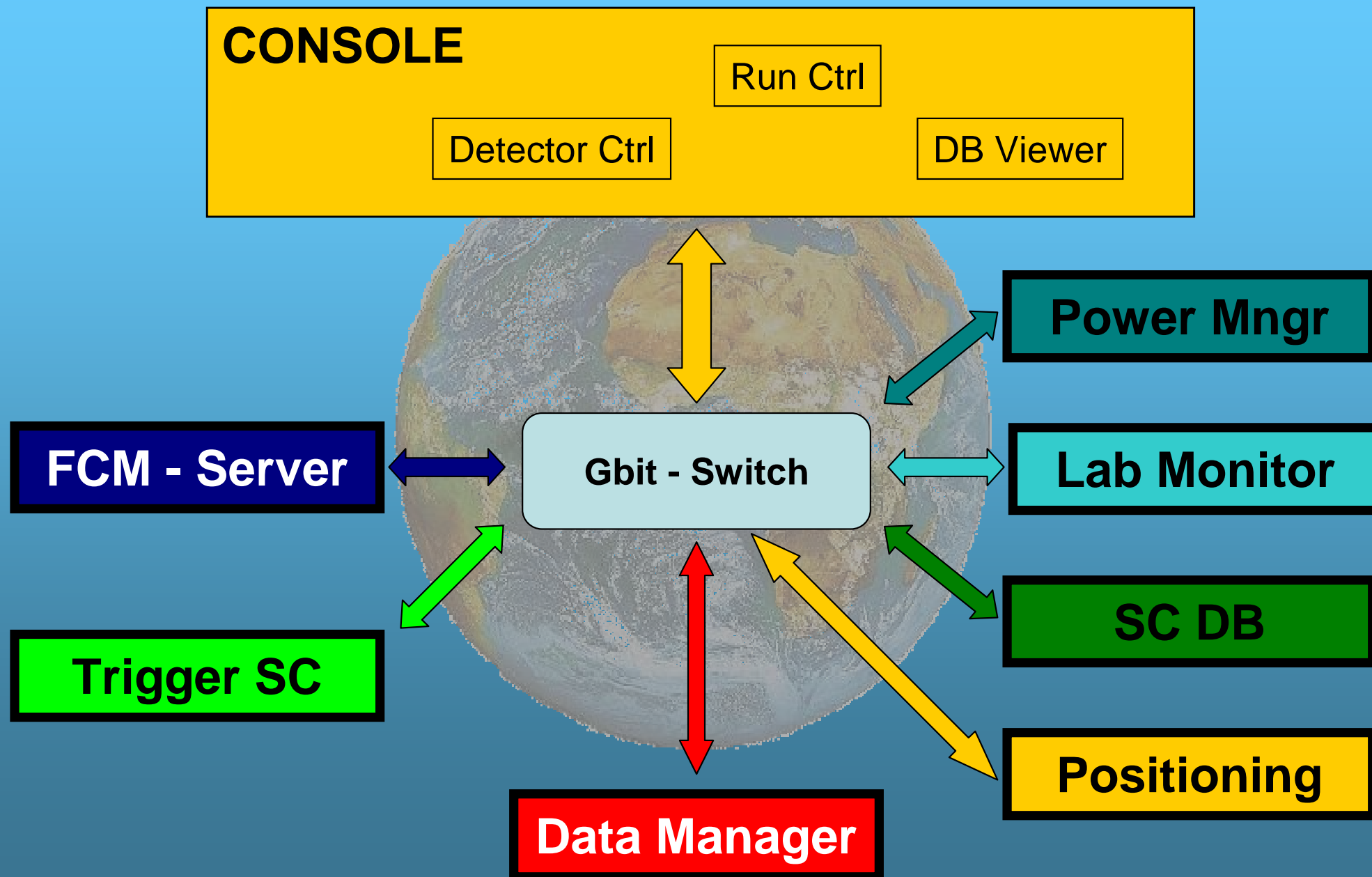
~ 12 TB/100 towers/year → ~ 120 TB/100 towers/20 years



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- At startup once (any)
 - If it changes (digital)
 - If $\Delta X = X_n - X_{n-1} \geq \text{threshold}$ (analog)
 - If $\Delta t = t_n - t_{n-1} \geq \text{period}$ (any)

Periodic (monthly) analysis

Realistic amount of qualified SC data: less than 10%



Capopassero

LNS

Data Manager

Data Manager

Console

Console

Console

SC DB

Gbit - Switch

SC DB

Console

operating

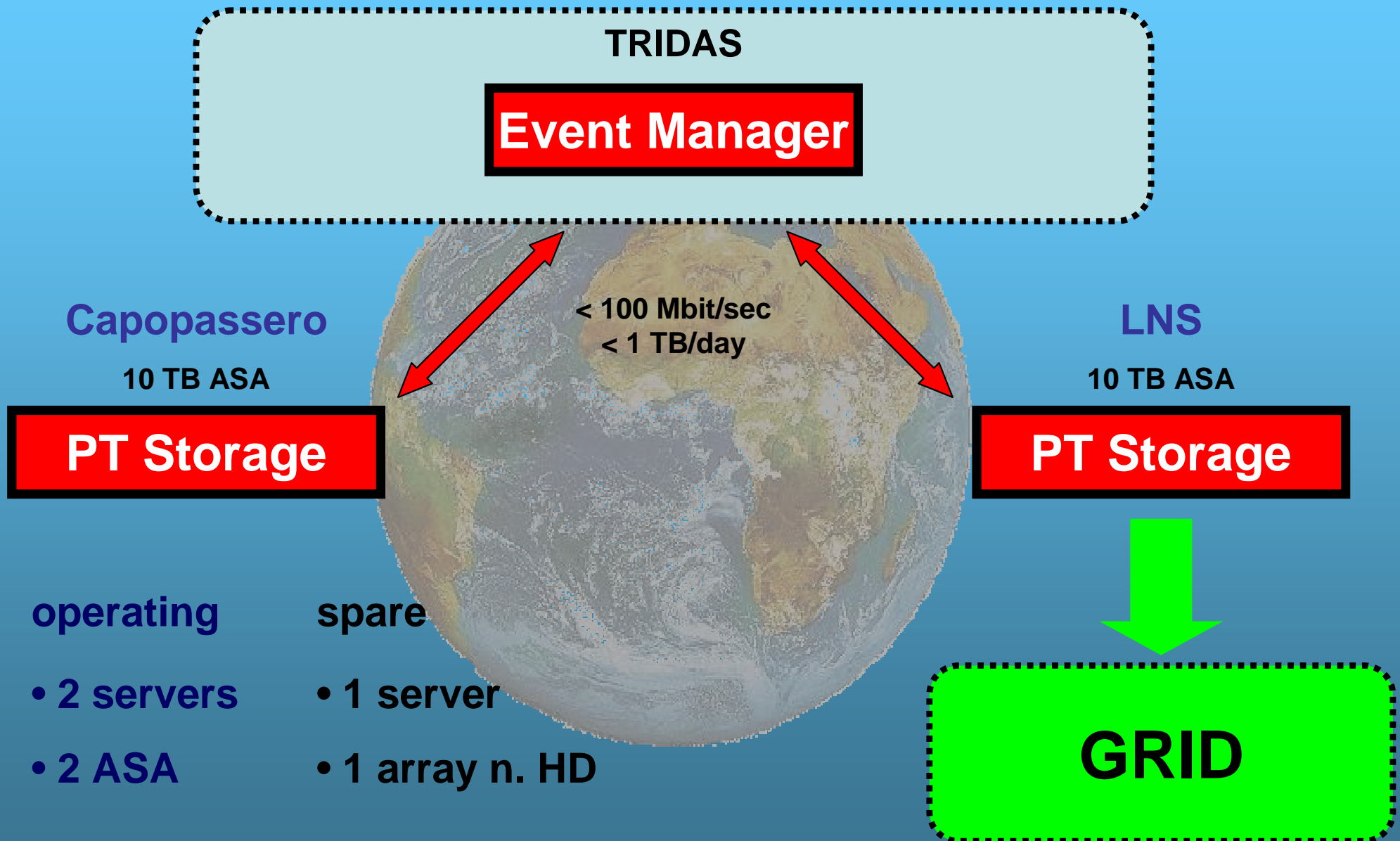
- 4 servers
- 4 workstations
- 2 ASA
- 1 Gbit switch

spare

- 1 server
- 1 workstations
- 1 array n. HD
- 1 Gbit switch



Post-Trigger Files Storage



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- A large, semi-transparent image of the Earth is centered in the background of the slide, showing the continents and oceans in muted colors.
- **Developers Grid.**
 - **Preliminary meeting with experts (started).**
 - **Towers equipments layout (required).**
 - **Protocols documentation (mandatory).**
 - **Protocols documentation acceptance (start up).**
 - **Procedures documentation (mandatory).**
 - **Parameters configuration for data recording into DB.**