Net Dev Incubator
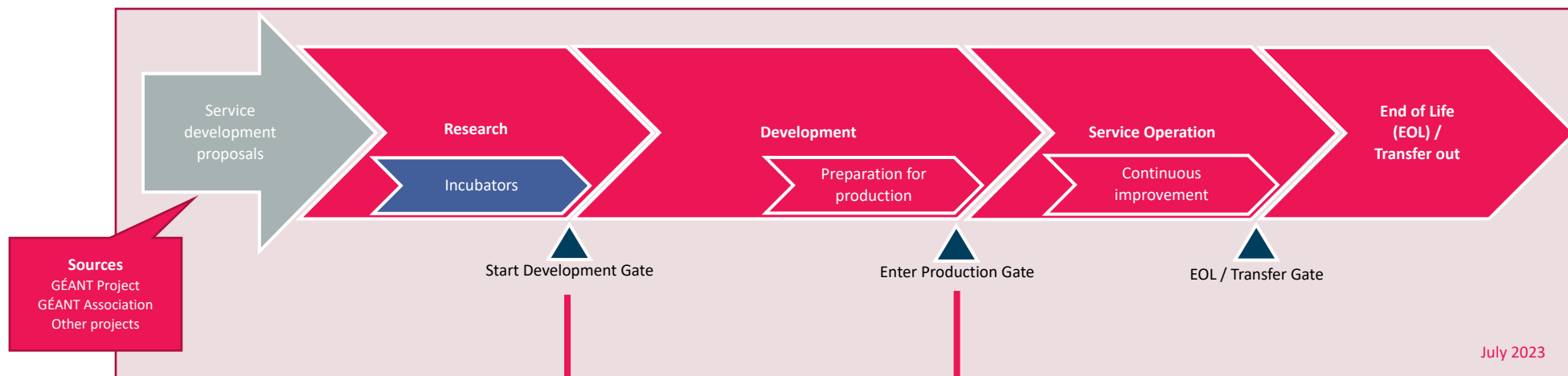
Lessons from the T/F Incubator

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Public

- Net Dev Incubators are a new initiative in GN5 to improve agility of the GEANT project development process

- Long funding cycles don't fit well with a rapidly changing technology landscape

- Some of the best innovations come from the clever ideas from network engineers and developers operating networks

- Net Dev Incubators are designed to allow new ideas to be accelerated into development without waiting for the next GEANT workplan.

Service development proposals

Research

Incubators

Development

Preparation for production

Service Operation

Continuous improvement

End of Life (EOL) / Transfer out

Sources
GÉANT Project
GÉANT Association
Other projects

Start Development Gate

Enter Production Gate

EOL / Transfer Gate

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Start Development Gate Checklist	
1	Problem statement and objectives
2	Users
3	Benefits
4	Service description
5	Market analysis
6	Costs
7	Funding
8	Roadmap
9	Planning
10	Resources

Enter Production Gate Checklist	
1	Service definition
2	Code quality
3	Marketing and visibility
4	Service policy
5	IPR
6	Security inc GDPR
7	Operational support
8	Roadmap
9	Service sustainability
10	KPIs

https://geantprojects.sharepoint.com/sites/plm

- Good tools will help your team deliver

- Agee which tools you want to use and set these up rapidly

- We chose to use:
  - Wiki.geant.or
  - GEANT sympa mailing list
  - Weely zoom calls

- First step in the T/F incubator was to agree the problems statement

- Then we set out the high-level objectives of the incubator

- There is a growing number of optical clocks being built which require fibre networks to enable accurate comparison of time

- Current TF *fibre* networks are fragmented, without a coordinated plan to integrate them into a unified network after two rounds of H2020 funding (CLONETS / CLONETS-DS)

- Metrology community are planning to redefine the SI second, 2030

- Build a unified network based on existing national infrastructure, joining these islands together (minimum ten countries)

- Invest in coordination between NRENS and NMIs to build a sustainable community

- Identify long-term operational funding beyond 2027

- The scope of work is important

- Clearly identify what is to be done in the incubator

- For example, the incubator is not a place to do development

- It should explain the proposed idea and collect the data needed for the gating phase to go into development

- Build on CLONETS-DS work (do not repeat work already done)

- Provide guidance to GEANT governance on funding objectives

- Work with NMIs to set out ownership, usage, sustainability models

- Define relationships between stakeholders

- Set foundations for procurement process

- Initiate a pathfinder link to prove the technology

- Use the checklist provide in the PLM website to make sure that your incubator has covered all the required information.

- The check list is useful and the portal explains what information is needed for each item on the list

- If you have any questions Richard Lui will be able to help. Richard.lui@geant.org

- This process is here to help you get your idea through, not to stop you

Item	Category	Status
1	Problem statement and objectives	Complete
2	Users	Complete
3	Benefits	Complete
4	Service description	WIP
5	Market analysis	Complete
6	Costs	Complete
7	Funding	WIP
8	Roadmap	Complete
9	Planning	Complete
10	Resources	Complete

- If possible, set out a desired roadmap for the service you wish to develop

- The incubator phase should be as short as possible to keep the process agile

- Prepare a short report for hand-over. This should include enough information to cover all relevant items in the PLM gate
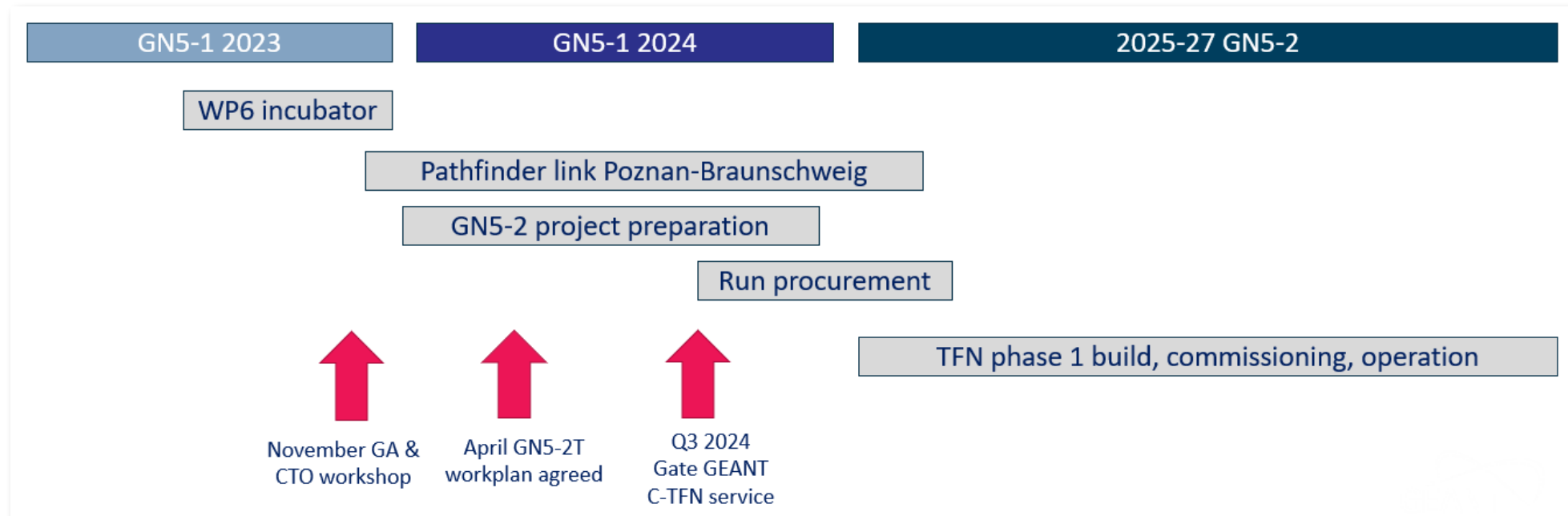
Recommendations

- We included a clear set of recommendations

- This was aimed at helping the reviewers in the PLM gate know what we wished to do next

- Make sure you know who the recommendations are for

Item	Recommendations
1	In GN5-2 GÉANT should fund the sum of Euro 7.5 million to build the GÉANT C-TFN
2	The Topology of the GÉANT C-TFN should build on options A and B based on community agreement.
3	The funds provided should be primarily used for purchasing cross-border fibre IRUs and associated amplifier equipment.
4	GÉANT funds should be used to put in place IRUs for fibre links and associated equipment. These fibre links should be owned and operated by GÉANT
5	GÉANT should also use GN5-2 funds to cover the maintenance cost of the fibre and associated equipment.
6	The fibre IRUs are recommended to be 10 years duration, with a low annual charge to ensure a small ongoing liability in case of funding for maintenance is not available after GN5-2
7	The fibre IRUs should have a clause that allows GÉANT to terminate the fibre contract during the IRU with a well-defined and low liability to GÉANT and its NREN shareholders.
8	GÉANT should invest in manpower to help the NMIs and NRENs to create a community for agreeing operation and usage of the federated infrastructure.
9	For sustainability purposes, GÉANT should initiate a process to find funding after GN5-2 ends.

Conclusions

- Keep the aims limited and concise

- Set tight deadlines

- Use good tools to manage information and your team

- Follow the PLM checklist

- Set clear recommendations

Proposed C-TFN: Option A
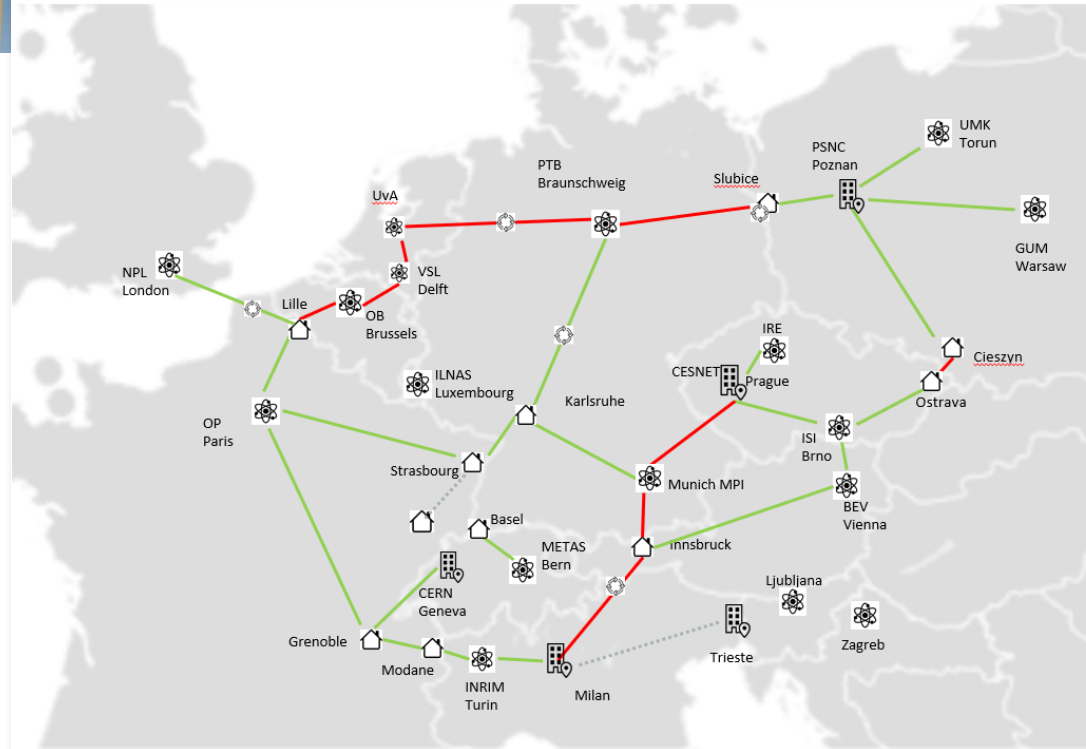
Included:
- 10-year IRU for fibre on red routes
- RLS & Bi-directional amp on red routes (one fibre only)

Excluded:
- Green lines – these exist already
- Dashed grey – planned links (funding secured by NREN)
- Flywheels
- Regenerators on one direction only to save costs
- and orange routes fibre already provided by NREN/NMI
- NMIs are to fund any flywheels, counters frequency combs at their sites
- Time – white rabbit/ ELSTASB out of scope for phase 1

- NMI Frequency reference
- Research institute
- Hut for housing RLS
- Regenerator Laser Station
- Flywheel
- Frequency comb

IMRiM
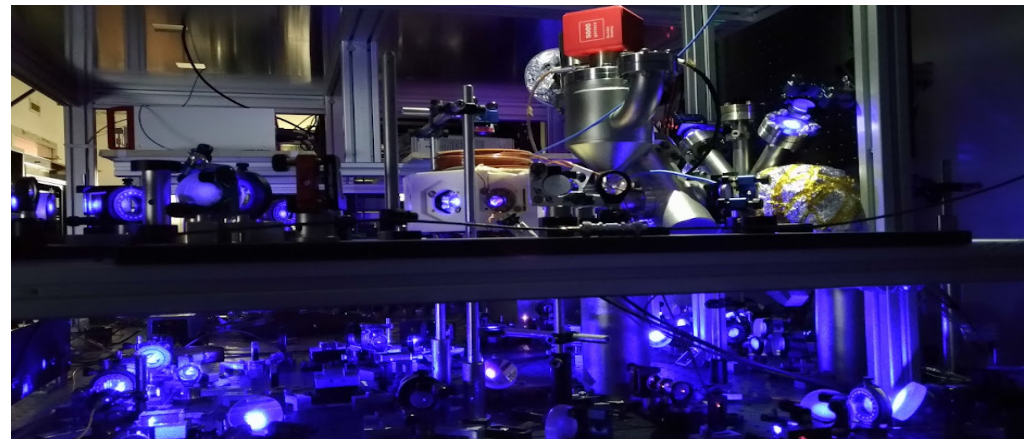
Thank You

Any questions?

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