



Science and
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Impact in GridPP

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GridPP 48 Collaboration meeting



GridPP
UK Computing for Particle Physics

Who am I?

- Rose Cooper, STFC – Scientific Computing Department
- GridPP impact officer
- Other roles:
 - Service manager of RAL FTS
 - Admin for Grid Tools

Overview

1 What is impact?

2 Importance of impact

3 Examples of impact of GridPP

4 How can we continue the impact of GridPP?



What is impact?

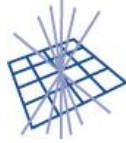
- According to UKRI:
 - Improving understanding of ourselves and the world around us
 - Improving lives and increasing prosperity
 - Addressing industrial and societal challenges
 - Relationships with their communities and partners
- Showing that we can deliver computing commitments, whilst also meeting these additional goals.

Importance of Impact

- Impact is a core consideration throughout the grant application process at STFC/UKRI
- Helps to show the wide reaching value of the work we do
- Demonstrates that we are the best people to be doing the work



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Examples of impact from GridPP

Networking improvements

- Janet as a network has been scaled to meet the needs of its users
 - GridPP is also the community with the largest data transfer needs in the .ac.uk community
- Paved the way for others larger communities such as SKA when moving large volumes of data over a network.

Predicted future requirements

- Aggregate bandwidth requirements by 2024:
 - Tier 1: 200 Gbit/s
 - Tier-2 (large): 100 Gbit/s
 - Tier-2 (other): 10-20 Gbit/s (and in some cases 40 Gbit/s)

- Data challenge scale:

	2023	2025	2027
Bandwidth scale for RAL Tier-1 (Gbit/s)	90 (data challenge)	180 (data challenge)	500 (operation)

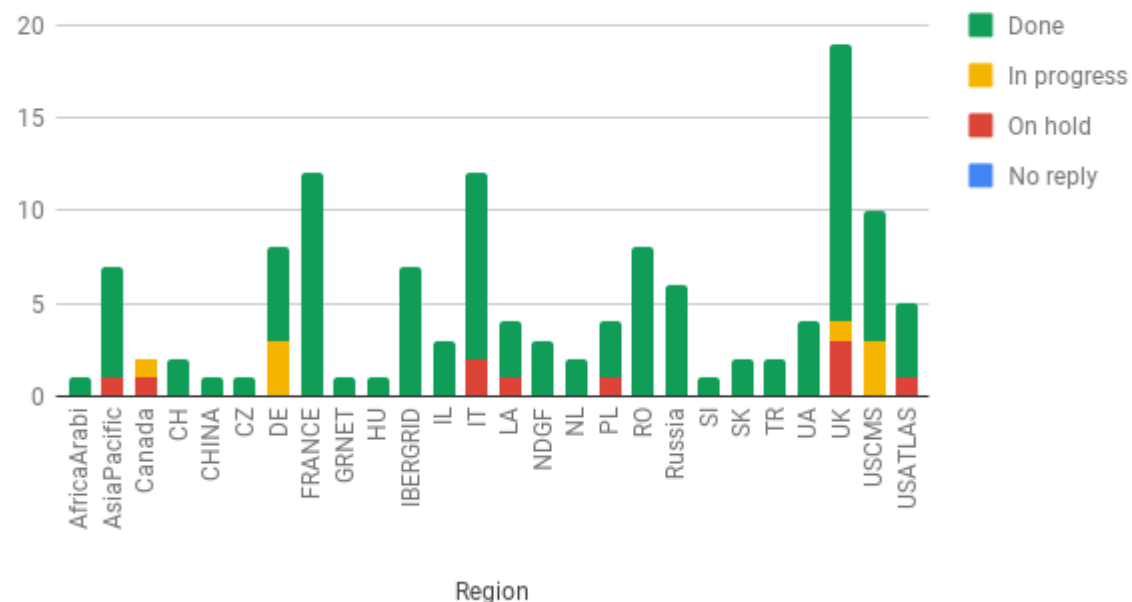
- Likely to require closer to 500 Gbit/s links by 2027

Current network configuration

- RAL now connected to Janet by 2x100G links, as well as a separate 100Gbit/s dedicated connection to CERN
- The large Tier-2 sites are also moving to 100Gbit/s links with Imperial being the first of these
- 15 out of 19 UK sites have IPv6, and 80% of the Tier 2 storage sites have IPv6 enabled

Deployment status

Tier-2 IPv6 deployment status [28-07-2022]



XRootD workshop

- Organised by Ian Collier, run by Sam Skipsey and Matt Doidge
 - had 10 attendees, 5 from GridPP side and 5 from SKA
- Used to educate new users of the system
 - informal introduction to what XRootD does, why we use it, and how to set it up
 - Making a client, basic config., authorization, etc.
- Will be needed when using a system like FTS

Cybersecurity updates

- Work done by GridPP instrumental in updates and improvements at STFC/UKRI
- Also an impact on security discussions around IRIS
 - Deloitte workshop
 - policy discussions
- Will also have a positive impact moving forward as work begins on new projects

Thematic CERN school on security

- Took place June 19th-25th 2022 at the MEDILS institute, Split, Croatia
- Full title: **CERN School of Computing “Security of research computing infrastructures”**
- Aimed at people working in academia and research institutes, who need to ensure security and resilience of computing resources they manage, and want to be prepared to detect and handle possible security incidents

Thematic CERN school on security

- 36 students were able to attend
- Mixture of lectures & workshops
- Covering topics such as incident response, logging, detection, protection and prevention

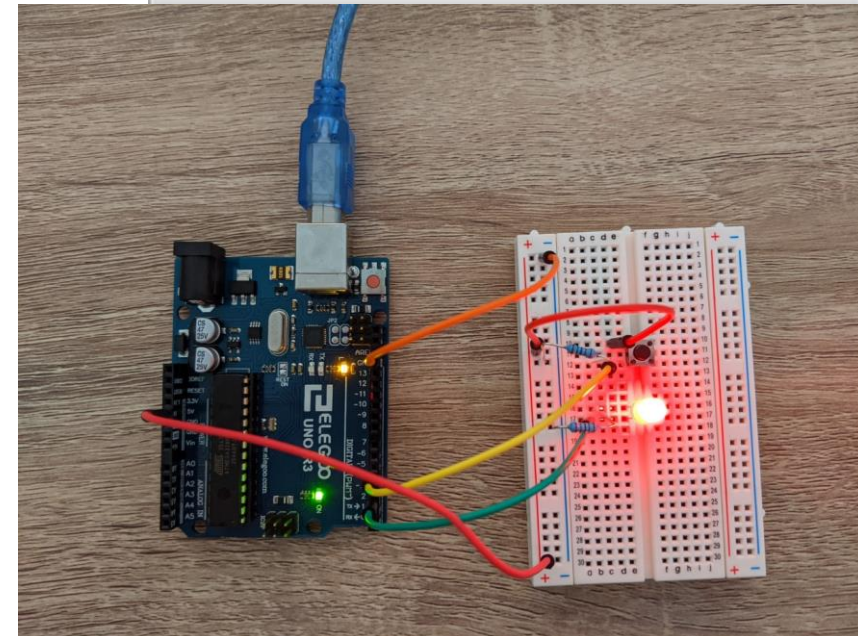
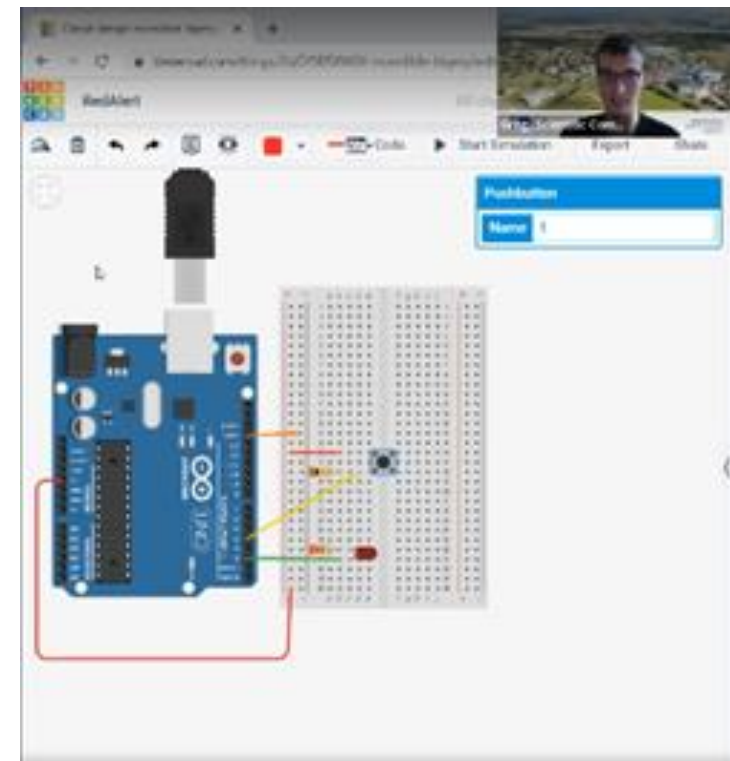


Ada Lovelace day

- October 12th 2021, STFC hosted a virtual computing themed challenge day for 180 children in Years 7, 8 and 9 to mark Ada Lovelace's achievements
- Aim of the day was to repair the Ada Lovelace, the first ship to Mars carrying a crew, after mission critical hardware & software failed.
- Event was co ordinated & supported by GridPP staff

Ada Lovelace day

- Combination of working with physical Arduinos as well as virtual
- All conducted remotely via zoom
- Day also included a data centre tour & a career talk





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What I need from you?

Have you been involved in work that has generated impact?

- Do you have any examples of impact that haven't been included in these slides?
 - public engagement activities
 - non LHC work
 - improvements within your organisation
- Did you do or make something that didn't exist before?
- What has changed?

Examples of activities that generate impact.

- enhancing community capability through technological developments and training
- enabling success outside the LHC programme through the STFC IRIS project and beyond
- raising awareness of e-Infrastructure and its importance to modern scientific endeavour through outreach and engagement
- generating industrial impact through shared projects drawing on our accumulated experience and driving the development of commercially important technologies and tools
- enhancing education and teaching practice through continuing involvement in programmes such as the research in schools.



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Thank you

Any questions?

If you think you've had impact, or know
of a piece of impactful GridPP work,
please let me know:

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