COVID-19 Readiness
Report from the Surveys

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Tuesday, 26 May 2020

Session #1: 7am-9am UTC

Session #2: 2pm-4pm UTC

Rationale & actions performed

- Quickly after the world entered into lock down due to the spread of SARS-CoV-2, idea was heard to survey "COVID-19 Readiness"

- Done in two rounds:
  - 1st on 13 March 2020
  - 2nd on 12 May 2020

- A big **thanks** to those organizations that filled out at least one or both surveys (in random order):

Jisc, Internet2, CERNET, REANNZ, AARNet, ESnet, FCCN, KAUST, RedCLARA, CENIC, KISTI/KREONET, NICT, GÉANT, NII/SINET, CANARIE, NICT, SURFnet, NORDUnet
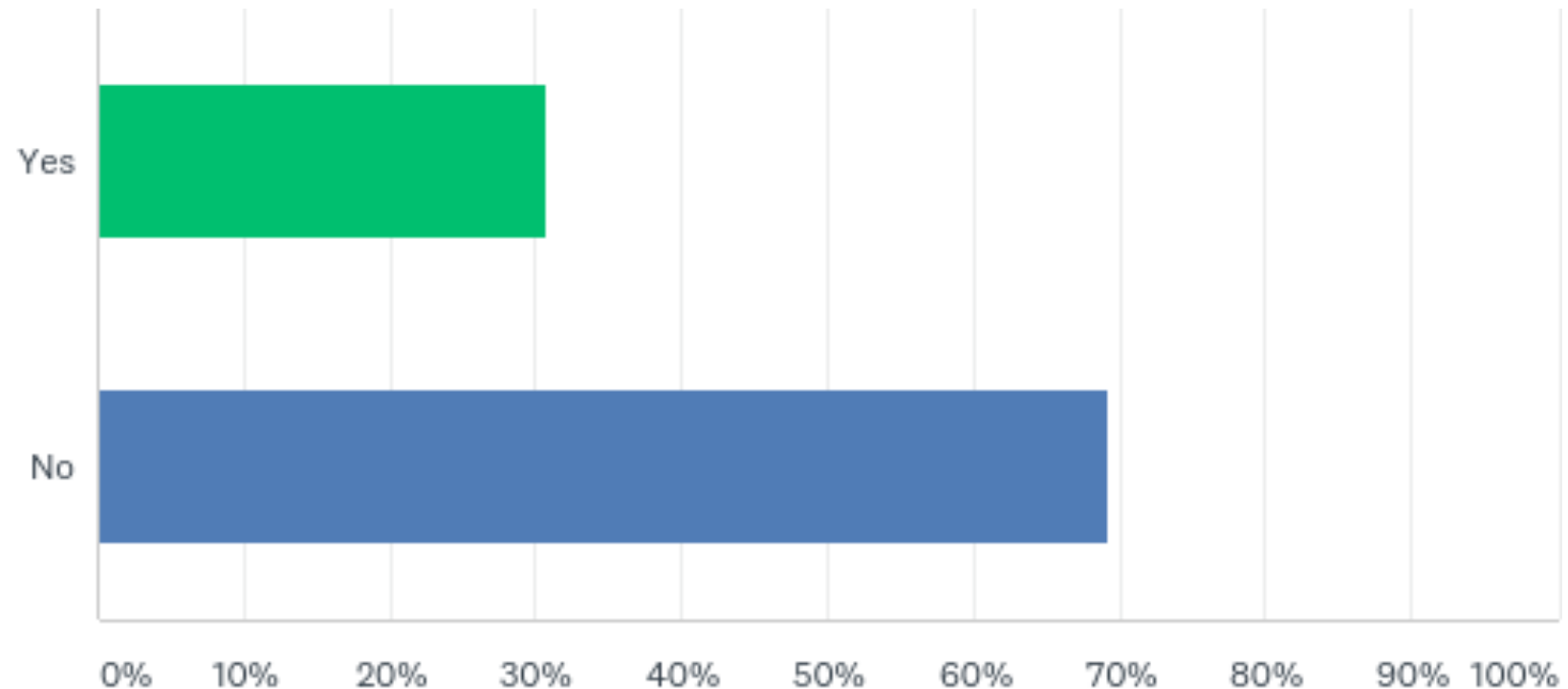
From the first Survey (1/3)

- Q: Did you take any measures to ensure continuity of your network & operations?
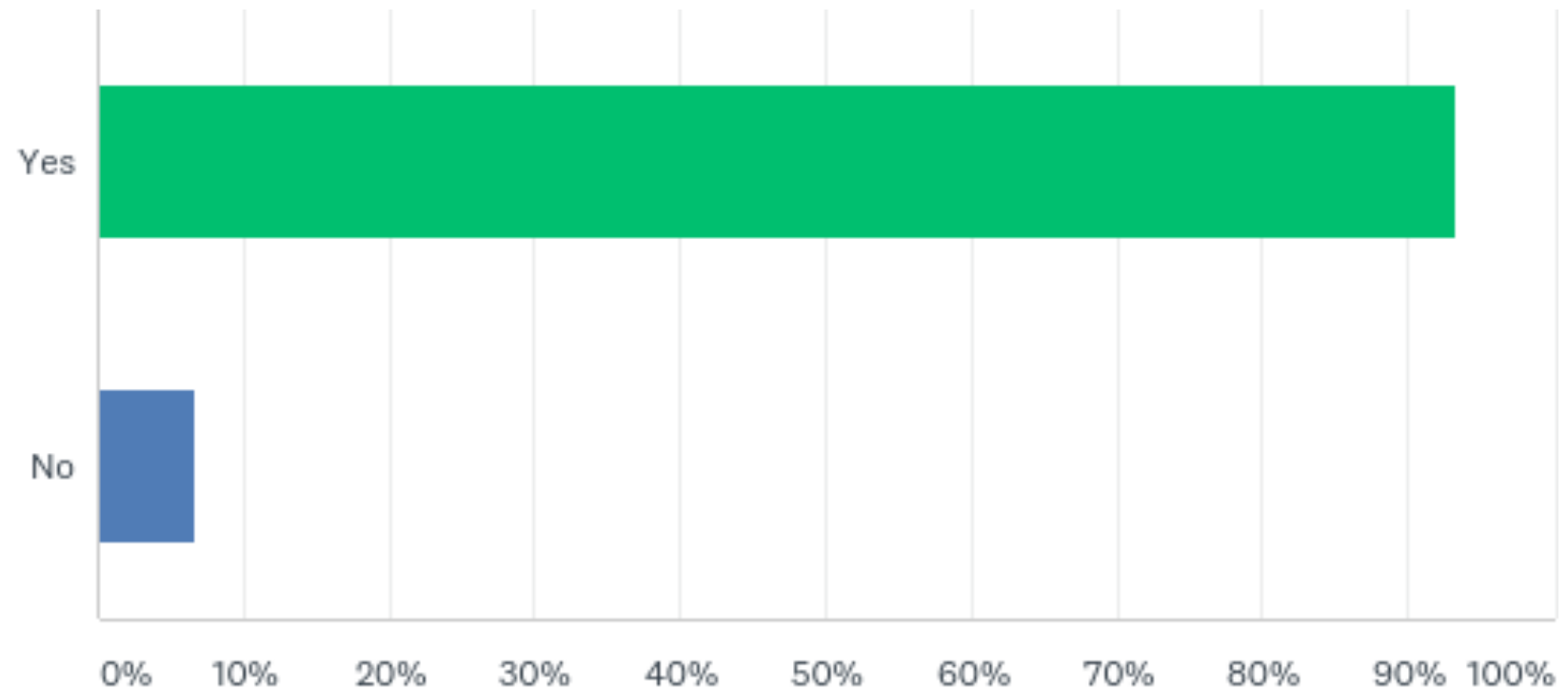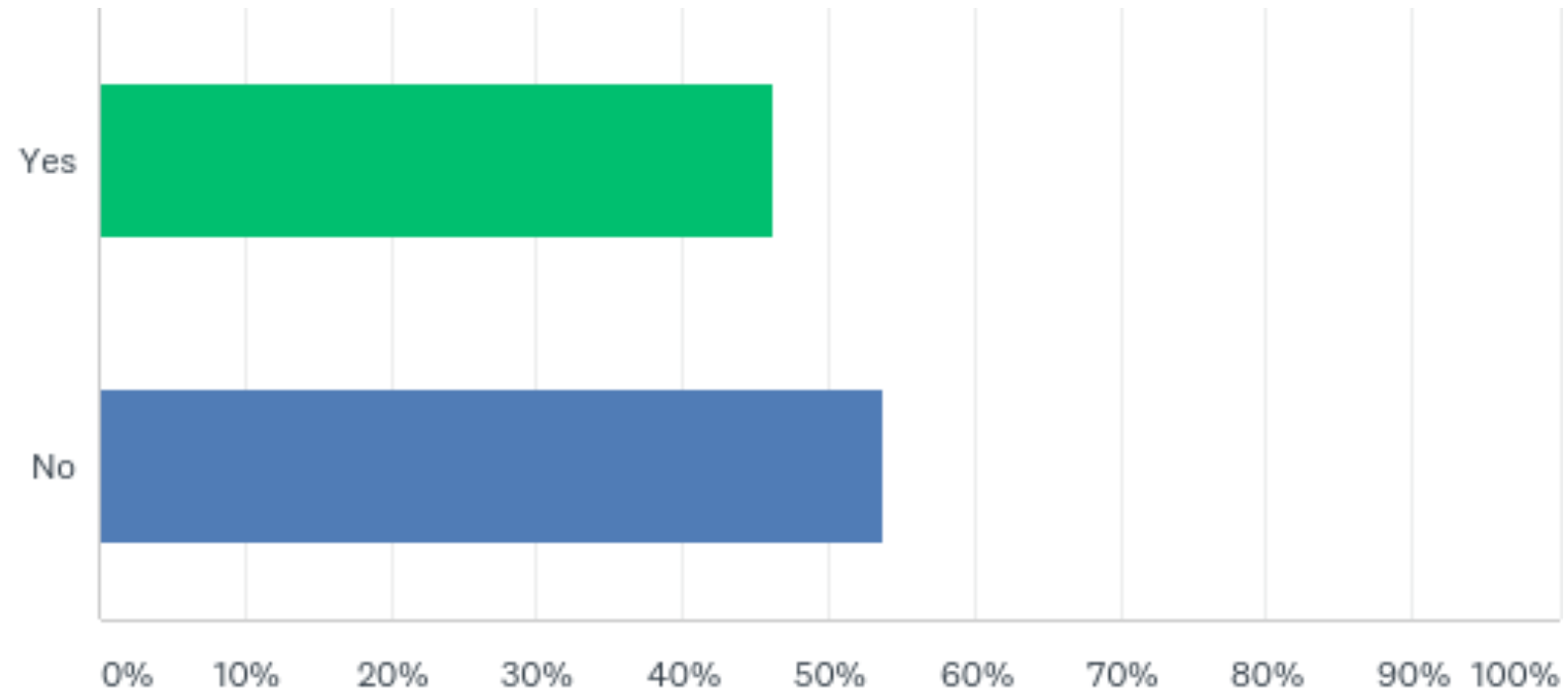
From the first Survey (2/3)

- Q: Are you working with other R&E Networks to provide coverage in staff and/or supply chains if such a need arises?

From the first Survey (3/3)

- Q: Have you recently made special arrangements with one or more of your vendors or suppliers, e.g. for extra capacity or for extra spares?

From the second survey (1/3):
Q: Please relate your experiences of collaboration with other R&E Networks in your region

- We have been **monitoring recent traffic changes**

- **Checking peerings** and traffic through transit points

- We have been collaborating with our regional partners for a long time. During the pandemic our **collaboration is even tighter**.

- Since the closure of non-essential businesses, management **meets with regional partners every week** to discuss and share resource planning in network and personnel, as well strategic planning for the coming months

- **Prepare for the new school year** in September

From the second survey (2/3):
Q: Please elaborate on how you think the GNA-G could be of assistance during this pandemic

- It would be helpful if GNA-G can coordinate with NRENs or other advanced networks to **collect an inventory of network resources** that can be made available to support other NRENs during the pandemic in the case of extended network outages that impacting services
- **Sharing experiences** about network operation and user support during pandemic
- **Supporting global-scale research on COVID-19** with high performance network linking scientists
- Promoting and helping **on-line seminars and on-line conferences**
- Looking at **optimisation of traffic flows** from user perspective (e.g. students working from home, VPN into campus, connectivity to service providers
- Making sure the **community stays informed**
- **Identify next steps and possibilities**, come with direction

From the second survey (3/3):
Q: Please share your lessons learned here

- The **information sharing** is important for network operation in this environment
- Improve **remote working** environment & arrange user accounts for web meeting systems in advance
- We implemented the **freeze of network** changes, including new service activation
- The operation team was **focusing on network monitoring** to ensure its operating smoothly. Although we are in a holding pattern, the network team was still planning for new projects assuming that things will get back to some sort of normal in the coming months
- Would we have done differently? Even though governments started relaxing lockdown, the closure of schools continues. There isn't much we can do differently. We would continue working through issues whatever we can with our regional partners but **take any necessary precautions** to ensure health and safety of everybody
- A **more tightly-coupled virtual organization** to work together including network operation, user support, and technology development even in a pandemic situation would be needed locally, nationally and globally
- Learned to publish **access to specific housing locations** (if, when, how, emergency access)
- Weekly **crisis management calls** to evaluate priorities of planned work (only really needed stuff)

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Thank you! Questions?

Detailed Answers

Q5: Did you take any measures to ensure continuity of your network & operations?

1. We have an on-site NOC, so we identified changes in policies, processes, and tools to transition to a remote workforce. NOC engineers now working from home

2. Installed a constant video chat for the NOC team members, because they are now home working

3. Contact all providers, vendors and PoPs to determine their status and capabilities, reviewed supply chain, and pre-ordered some equipment

4. Carried out a disaster recovery test

5. Halted all non-essential maintenance work during and immediately after transition to remote working

6. We've been responsive to R&E members requesting immediate changes to connectivity from their sites to our backbone in anticipation of changes in network traffic

7. Moved field engineers onto campus housing & granted field engineers curfew passes

8. Keep the maintenance windows, but if needed physical access, only one person goes

9. Identified single points of human failure, identified backups, and video cross-training initiated (with recording of the video as backup)

10. Added network capacity towards other countries/regions

11. Added server capacity to support our Zoom platform

12. Reviewed financial impact

13. Reviewed Business Continuity Plans (BCP) for organization, coordinated with key suppliers on their BCPs

Q9: Are you working with other R&E Networks to provide coverage in staff and/or supply chains if such a need arises?

1. We have long-standing agreement with PNWGP in Seattle on mutual assistance.

2. All from Latin America where we have a PoP

3. Although we do not have coverage staff with other NRENs, FCCN and RedIRIS operate one of the Portuguese interconnections with GÉANT. We have made arrangements so that they can travel to Portugal and we a FCCN can travel to Spain in order to operate the our equipment we have in other country. Also the operations teams are in contact by email and telephone so that any problem is taken care of

4. It is hard to give access to internal tokens, and bypass security at short notice. We are thinking through such plans and discussing but haven't formally reached any agreements

5. Held conference call to discuss with regional networks coordination and readiness

Q11: Have you recently made special arrangements with one or more of your vendors or suppliers, e.g. for extra capacity or for extra spares?

1. No special arrangements, but ascertained new limitations on provider resources and asked providers to identify, surface, and proactively mitigate any supply chain issues that would impact our organization

2. Moved internal procurement deadlines forward for critical network equipment and backwards for non-critical items. Working closely with local external suppliers to understand their current supply chain issues

3. We know that out supplier has equipment in stock that we may need

4. Talking to network & server suppliers to ensure timely delivery, including latest possible date to avoid supply chain issues – pre-ordering some equipment to last us ~6 months - verifying availability with fibre optic cable suppliers

5. No special arrangements per se, but have had regular conversations about stock on hand, etc.

6. Request router vendors to guarantee extra spares

7. Increasing peering with key collaboration tool service providers to accommodate move to on-line learning

Q13: If you already have one of more lessons learned that you can share, please share them here (part 1)

1. The most important lesson is to enable a shared working environment with NOC teams who are likely to be working at home

2. To consider BCP measures again in advance

3. Keep social distance and close distance among human beings with solidarity (on online)

4. As we adjusted the work environment in response to COVID-19, our tendency was to focus on "the job," but we found it equally important to identify and acknowledge human considerations, such as addressing the stress that the pandemic is causing, the isolation of working remotely, or the pressures of being surrounded by family members who may not be working

5. Automatization is a must

6. Team communication is always important, but in this situation there is no such thing as over communicating. The top 3 rules for my engineers are: a) Communicate with each other, b) Communicate with each other, c) Communicate with each other.

7. We did not know if the work would continue as well as we planned. The fact is that it is going pretty well for now. We have good connectivity, VPN, soft phones at home, good collaboration software, so for now we can keep the NREN running

8. Stress is high, people are going to be distracted, we need to be human at this time.

9. Find a place in the organization for staff to vent safely

Q13: If you already have one of more lessons learned that you can share, please share them here (part 2)

10. Act early, and assign sufficient resourcing - our senior management team is spending 50-80% of their time on preparations.

11. Focus on ensuring that staff are supported and able to work remotely. We are a distributed organisation, so have strong roots in this already. However accept that productivity will fall, particularly when children are sent home from school.

12. Overestimate the impact - we have seen Zoom load increase by a factor of ten, and more.

13. Communicate strongly with customers, although focus on things which actually affect them rather than just information sharing - everyone is receiving lots of emails at present

14. Guarantee the availability of onsite support for PoP site in university during isolation

15. Clarify with member institutions how traffic patterns may shift as on-line learning and study-from-home policies become the norm

16. Measured planning and good information dissemination from a single source within the organisation can provide reassurance and focus to colleagues

17. "Panic buying" may not be restricted to toilet rolls, hand sanitiser and cat food. Large monitors, headsets and other IT equipment is selling out fast too

Q14: In case of a question or remark in general on this topic or about this survey, please leave your comments here.

1. Don't forgot about staff wellbeing

2. We'd be very interested in seeing survey results when available

3. Would love to learn about others

4. We should be making greater use of nren.slack.com for inter-NREN communication!

5. R&E networks and services are critical to helping the community deal with the impacts of COVID-19. The ability of RENs to collaborate is a key element of that capability