

09-12-2024

Deliverable D3.5 Community and Innovation Programme Impact Report

Contractual Date:	31-10-2024
Actual Date:	09-12-2024
Grant Agreement No.:	101100680
Work Package:	WP3
Task Item:	Task 4
Nature of Deliverable:	R (Report)
Dissemination Level:	PU (Public)
Lead Partner:	GÉANT Association
Document ID:	GN5-1-24-194401
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Abstract

This deliverable describes the activities and impact of the GÉANT Community Programme over the two-year period of GN5-1. It covers strategy; the GCP's oversight body, the GÉANT Community Committee; GCP portfolio instruments and thematic areas; development areas; activities in support of each thematic area, and their impact and reach.



Co-funded by
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Executive Summary

This deliverable describes the activities and impact of the GÉANT Community Programme (GCP), undertaken by the Work Package 3 (WP3) team over the two-year period of the GN5-1 project (January 2023 – December 2024). It covers shifts in strategy; the GCP's oversight body, the GÉANT Community Committee (GCC); GCP portfolio instruments and thematic areas; development areas; activities in support of each thematic area, and their impact and reach; the concept, implementation, results and impact of the GÉANT Innovation Programme and GÉANT Community Award; and communications.

The GÉANT Community Programme is a grassroots, voluntary initiative involving experts from National Research and Education Networks (NRENs), end-user organisations and the commercial and industrial sector, from both within and outside Europe. Its goal, as defined in its current strategy, is “to be the primary forum for enabling and fostering collaboration and harmonisation in the R&E networking community, furthering development and progress in Internet technology, infrastructure, R&E services, digital transformation and activities, and of the research and education community itself”. The current strategy was developed to complement the GÉANT Association strategy, and while the goal remains steadfast, it is useful to reflect and evaluate successes and shortcomings of the full strategy as both GÉANT and the community evolve. Laying the groundwork for greater impact in GN5-2 was an important focus in Period 2 of GN5-1.

Meanwhile, the GCP did continue to develop in various areas during GN5-1, including numerous new initiatives: a Community Programme CRM dashboard; the TNC Community Hub; and Community Principles. Additionally, there have been improvements in the GÉANT Innovation Programme and changes in its portfolio of thematic groups.

The main instruments in the GCP portfolio are still Task Forces (TFs), Special Interest Groups (SIGs), workshops and training, and collaborative projects. The thematic areas supported by the GCP are formed and continuously evolve from the needs of the GÉANT community, which includes an ever-expanding constituency of GÉANT Association members and non-members – essentially anyone interested in voluntary activities and collaboration related to the Research and Education Networking

The areas supported at the end of GN5-1, and their primary groups, are as follows:

Security

- Special Interest Group on Information Security Management (SIG-ISM) [[SIG-ISM](#)].
- TRANSITS, a component of the Task Force on Computer Security Incident Response Teams (TF-CSIRT) [[TF-CSIRT](#)].

Trust & Identity

- Research and Education FEDerations (REFEDS) [[REFEDS](#)].

Network

- Special Interest Group on Next-Generation Networks (SIG-NGN) [[SIG-NGN](#)].
- Special Interest Group on Network Operations Centres (SIG-NOC) [[SIG-NOC](#)].
- Special Interest Group on Time & Frequency Network (SIG-TFN) [[SIG-TFN](#)]

Cloud

- Special Interest Group on Cloud Interoperable Software Stacks (SIG-CISS) [[SIG-CISS](#)].
- Open Cloud Mesh (OCM) [[OCM](#)].

Business Practices

- Special interest Group on Management of Service Portfolios (SIG-MSP) [[SIG-MSP](#)].
- Special Interest Group on Sustainability (SIG-Sustainability) [[SIG-SUSTAINABILITY](#)]
- Special Interest Group on Procurement (SIG-Procurement) [[SIG-PROCUREMENT](#)]
- Special Interest Group on Artificial Intelligence (SIG-AI) [[SIG-AI](#)]

Stakeholder engagement

- Special Interest Group on Research Engagement Development (SIG-RED) [[SIG-RED](#)].
- Task Force on Educational activities and services (TF-EDU) [[TF-EDU](#)].
- Special Interest Group on Marketing Communications (SIG-Marcomms) [[SIG-Marcomms](#)].
- Special Interest Group on Digital Health Data (SIG-DHD) [[SIG-DHD](#)]
- Network Performing Arts Production Workshop (NPAPWS) [[NPAPWS](#)].

In the two-year project period of GN5-1, the GCP organised 97 TF/SIG meetings, workshops, events and infoshares, with a total of 5222 participants from 68 different countries.

Key GPC achievements during GN5-1 include:

- 65 TF/SIG meetings, workshops and events were held with a total of 3821 participants from 67 different countries, from Europe and international organisations.
- 32 Infoshares were virtually held with a total of 1401 participants from 68 different countries.
- Two Community Hubs were organised as part of GÉANT's annual networking conference, TNC, as a space for community exchange and learning. The first Community Hub at TNC23 provided a space for informal demos and round table discussions, which grew and formalised as part of TNC24 in Rennes, to feature 42 sessions and attracted 600 participants (two thirds of conference attendees).
- Four new expert group activities were created, based on needs raised by the research and education community. These groups include: Special Interest Group on Sustainability (SIG-Sustainability), Special Interest Group on Procurement (SIG-Procurement), Special Interest Group on Time & Frequency Network (SIG-TFN), and Special Interest Group on Artificial Intelligence (SIG-AI).
- The Community Principles were launched to provide a vehicle to align thinking within NRENs and to carry out targeted activities as a community. Not only do they create a shared understanding of GÉANT's position on a specific topic, but they allow focus on specific joint actions to move forward within that space as a community. They include Gender Equality Principles and Open Source Principles [[PRINCIPLES](#)].
- The GÉANT Community Programme strategy was evaluated, and significant progress was made in revising the GCP's vision, goal, mission and objectives to better reflect community priorities. This was done via a participatory process with SIG/TF representatives. The terms of reference for the governing body, the GCC, has also been reviewed, with recommendations for significant overhaul in GN5-2.
- The GÉANT Innovation Programme awarded 16 projects in total. In 2024, 66 applications from 20 countries were submitted the highest number since the launch of the Innovation Programme in 2021. 36 applications were submitted in 2023.

- The GÉANT Community Award nominees were announced along with all the winner at TNC24 to provide more visibility on all the individuals nominated. [[GCA](#)].
- Support for WP8's first Security Days campaign was launched in 2024, drawing 182 security professionals from around the world. The success of the event has spurred the team to continue in 2025.
- A new dashboard was created in the CRM platform to track and analyse GCP data more accurately and efficiently.
- A new Events and Project Specialist was hired to support Community initiatives, including: TF/SIGs, NPAPW, and Security Days as well as professionalise event coordination and execution at the organisational level.
- The Task Force on Research Engagement evolved to be a Special Interest Group with a renewed interest and expansion of its participants.
- The first joint SIG/TF Coordinators, SC representatives, and GCC meeting took place to provide input on the new GCP Strategy and identify areas of future collaboration. The participatory approach and convergence of experts was a valuable experience for cross fertilisation and sharing lessons learned. It set precedence for bringing the diverse experts together regularly to guide strategy development and reflect and evaluate collectively on the GCP.

Reflections and developments in GÉANT Community Programme during GN5-1, together with the high volume of meetings, workshops, trainings, events – both online and face-to-face – and communications, mean that it continues to be an invaluable framework for connecting people, sharing experiences, leveraging knowledge, enabling collaboration, and fostering innovation across R&E.

1 Introduction

Collaboration of experts in different geographical locations and disciplines is crucial to the GÉANT community. The GÉANT Community Programme (GCP) was established to foster collaboration and support community-driven initiatives in a broad range of thematic areas, including innovation, management and operation, for the National Research and Education Networks (NRENs) and GÉANT to build communities, share ideas and solve common issues.

The GÉANT Community Programme is a grassroots, voluntary initiative built by world experts from NRENs, user organisations, research institutions, and commercial and industrial sectors, both within and outside Europe, and including international bodies. Indeed, the Programme is unique in that it is open to all community members, not only those who are primarily European based; this global reach allows a very wide, cross-fertilisation and exchange of knowledge and experiences. The main instruments through which the GCP operates are Task Forces (TFs), Special Interest Groups (SIGs), workshops and training, and collaborative projects. These provide an effective framework for GÉANT, NRENs and other R&E bodies to collaborate and to share experiences, information and best practices. TFs and SIGs also provide a forum to discuss possible innovations and further developments of services, meaning the GCP has a role to play in guiding future development of networking services and technology, as well as a variety of non-technical topics for the GÉANT community.

Participating in the GCP – collaborating and sharing knowledge, experience, best practice and ideas, facilitated by GÉANT – helps the NRENs carry out their business and serve their users in the most informed, effective and beneficial way, and helps them support each other to do the same.

The GÉANT Community Programme is an open initiative and as such its wiki space [[GCP wiki](#)] and all associated papers are publicly available.

This document:

- Summarises the status of the GCP strategy and GCC governance structure.
- Outlines the main instruments in the GCP portfolio and the thematic areas currently supported (Section 4).
- Summarises key GCP developments that have taken place during GN5-1 (Section 5).
- Presents a summary of the activities that have taken place in GN5-1 to support each thematic area, and an assessment of their impact and reach (Section 6).
- Describes the implementation, results and impact of the GÉANT Innovation Programme and summarises general conclusions and recommendations (Section 7).
- Describes developments for the GÉANT Community Award (Section 8).
- Summarises the concept, implementation and results of the GCP-related communications (Section 9).
- Draws together and assesses the key points (Section **Error! Reference source not found.**).

2 GÉANT Community Programme – Strategy in Transition

In 2020 a long-term strategy was adopted [[GCPS](#)]. While this served as the blueprint for the GCP during the last four years, a renewal is due. To continue to evolve and advance the strategy, and ensure its relevancy to the community, the GCC and key representatives from the community activities gathered in an interactive, two-day workshop to both reflect on what was achieved and where gaps remain. Their insights will inform the new strategy, to be launched in GN5-2. This section presents some of the conclusions and recommendations for the future GCP strategy and the terms of reference for the GÉANT Community Committee (GCC).

2.1 Connecting People, Facilitating Collaboration, and Knowledge Transfer

The current strategy objectives are:

- Identify and share areas and trends benefiting NRENs and the wider R&E community.
- Manage the lifecycle of groups and activities.
- Connect people to the right human network.
- Support methods of eliminating gaps within the R&E community.
- Facilitate group collaborations.
- Raise awareness about the GÉANT Community Programme.
- Facilitate knowledge transfer.

When evaluating these during the workshop, the group identified “Connect people to the right human network”, “Facilitate group collaborations”, and “Facilitate knowledge transfer” as the most important objectives for the GCP and considered these to be successfully reached during GN5-1. There was full support to prioritise these objectives in the future strategy as the main tenets of the GCP. The full Mentimeter results are below in Figure 2.1

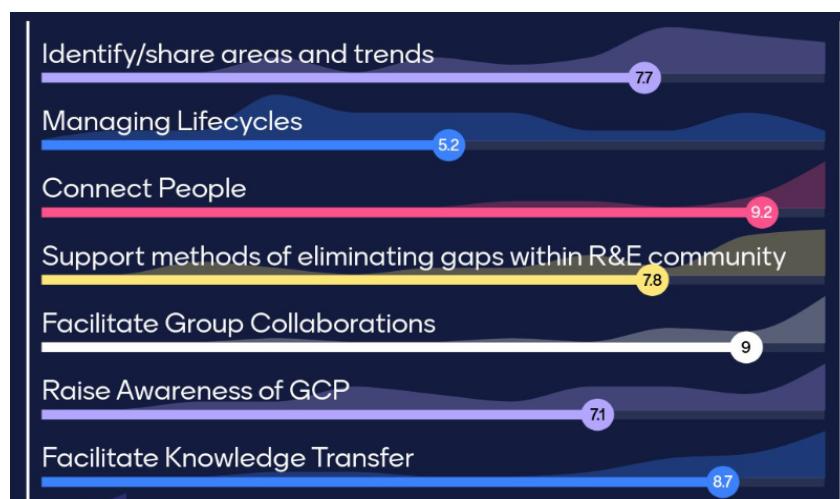


Figure 2.1: Mentimeter prioritisation of objectives

2.2 Gaps in the Community

Another area prominently discussed was the gaps within the R&E community. While this objective was rated “important”, it was concluded that the GCP still had a role to play in ensuring any existing gaps are eliminated. The diversity of the community continues to pose challenges to serve and represent the community holistically. In analysing the data of GCP activities, four GÉANT member NRENs have not participated in any GCP activity during GN5-1 and uneven participation continues to be an issue. This will be a crucial area of focus in the next GCP strategy, adaptations to implement in GN5-2, and also determining the role of the GCC.

3 GÉANT Community Committee

The GÉANT Community Committee (GCC) has oversight of the GÉANT Community Programme (GCP). This section presents an overview of the GCC's current objectives, governance transition and changing Terms of Reference.

3.1 Objectives and Deliverables

The main objectives of the GÉANT Community Committee as referenced in the GCP strategy are:

- Provide help, to NRENs that request it, with procuring ICT equipment and facilities for students, lecturers and researchers by, for example, sharing ideas, best practices, advising on harmonising procedures or technology selection, or jointly tackling an issue.
- Assist GÉANT in matters related to community-driven collaborative initiatives.

The main deliverables of the GCC include:

- Gatekeep new special interest group (SIG) formation.
- Inform new GCP strategy and GCC terms of reference (ToR).
- Determine the scope of the Innovation Programme, select projects to award, and review final reports.

The GCC stays informed of community activities via the GCP Manager, and the GCC Chair regularly reports progress to the GÉANT Board.

3.2 Governance Transition

The GÉANT Community Committee operates under the auspices of the GÉANT General Assembly via agreed terms of reference (see [\[GA\(15\)046_GCPToR\]](#) p. 2, #9). The Chair of the GCC is an NREN representative, elected by the General Assembly; the Committee's 6–8 members, who represent key expertise areas and/or communities, are appointed by the GÉANT Board of Directors based on input provided by the Chair in consultation with the GÉANT Executive Team. The current GCC Chair has been a member of the GCC since 2016 and is also now a member of the GÉANT Board. A transition to a new generation of the community is due and the GA will elect a new chair during its next meeting 20-21 November 2024. In addition, two GCC members have stepped down (Claudio Pisa, GARR, and Alexander van den Hil, SURF) and two new GCC members (Charlie van Genuchten, SURF, and Arjan Xhelaj, RASH) were appointed by the Board in May 2024. One GCC member was reappointed for a second 3-year term (Erik Kikkenborg, NORDUnet). Three GCC members will end their second terms in June 2025.

With the changing leadership and membership of the GCC and more active participation from representatives of the GCP activities, it is anticipated that the governance model will shift significantly in GN5-2.

3.3 Changing ToR

The role of the GCC, as detailed in the GCP Strategy, was at odds with the GCC ToR since the strategy specified authority of the GCC over the GCP while the ToR stated the GÉANT Executive Team was responsible for managing the GCP and is only advised by the GCC. While the GCC operated by the GCP Strategy during the GN5-1 project period, the ToR should remain as the main source of reference detailing its role and responsibilities. A new ToR that strives to reflect the community needs more strategically and effectively is under development and will be rolled out in 2025, together with the new GCP strategy.

4 GÉANT Community Programme Portfolio

This section outlines the main instruments in the GÉANT Community Programme portfolio: Task Forces (TFs), Special Interest Groups (SIGs), workshops and training, and collaborative initiatives. All activities fall within the currently supported thematic areas, which are also described, and have significant global, not solely European, participation.

4.1 Instruments

4.1.1 Task Forces

TFs are fixed-term, typically short-lived community-based collaboration activities, undertaken largely by volunteers who work together on specific tasks to produce tangible deliverables. Formal processes are in place for establishing, running and dissolving a Task Force, together with standard terms of reference that determine aspects such as the role of the chair and secretary, meeting frequency, deliverables, length of mandate and mailing list. While task forces have served their purpose since the beginning of the GÉANT Community Programme, the distinction from a SIG (see below) has become marginal. It will be phased out in GN5-2 and the remaining task force, TF-EDU will transition to a Special Interest Group.

4.1.2 Special Interest Groups

SIGs are similar constructs to Task Forces, in that they are also community-based and largely volunteering activities, but focus on community building, best-practice dissemination and knowledge exchange rather than on tasks and deliverables. Like Task Forces their lifecycle is governed by formal processes and standard terms of reference. SIGs are normally of longer duration than TFs, and are led by a Steering Committee rather than a chair.

4.1.3 Workshops and Training

One-off or series of community-based workshops, (un)conferences, or Birds of a Feather sessions (BoFs) may be organised around a specific topic of interest. Workshops may lead to recommendations for establishing further, follow-up activities. These may be captured in a workshop (or series of workshops) closing report.

4.1.4 Collaborative projects

The GCP provides a framework of secretariat, coordination and administrative support for a broad range of collaboration activities of interest to GÉANT. These can be small or large, often global, collaborations or specific components of such activities initiated by members or individuals from the community and administered/commissioned by the GÉANT Association.

GÉANT provides support to a variety of collaborative activities that are important to the community in order to ensure that they have the necessary coordinators and infrastructure to function well. In essence, the support provided is very similar to that for a TF or SIG – normally in the form of a professional secretariat for the collaboration – but these collaborations are typically self-sustained by the community and funding (if any) is not from the EC. Collaborations supported include Research and Education FEDerations (REFEDS) and TF-CSIRT.

Other noteworthy collaborative initiatives include the creation of the GÉANT Community Principles and the Community Hub at TNC. The GÉANT Community Principles is a vehicle to align thinking within NRENs when a

strategic agenda in a specific space is identified that benefits from a united approach. They create not only a shared understanding of the community's position on a specific topic, but a space for advancing the issue collectively. The focus of the principles is related to the UN Sustainable Development Goals [\[UN SDG\]](#). The first principles launched in GN5-1 are focused on gender equality.

The Community Hub is a component of TNC introduced in 2023 and continued in 2024.



Figure 4.1: Community Hub at TNC24 in Rennes

4.2 Thematic Areas

Thematic areas are formed and continuously evolve from the needs of the GÉANT community. The areas supported during GN5-1 are as follows. A table showing the related TFs, SIGs, workshops and collaborative activities is given in Appendix A.

Security

- This is a broad area, concerned with the confidentiality, integrity and availability of information and information systems. GÉANT's activities include defining and implementing appropriate security requirements for various types of systems. One requirement common to many systems is incident response: detecting and investigating failures and restoring the system to its intended security state.

Trust & Identity

- Trust & Identity focuses on identity management federations, harmonisation and standardisation of interfaces, access control, service location and diagnostics, and involve liaison with other communities when relevant, simplifying access to content, services and resources for the global REN community. Trust & Identity services enable mobility and facilitate sharing of information in a responsible manner.

Network

- This area is concerned with organisational aspects, coordination and exchange of best practice regarding the provisioning and delivering of network services. Work in this area supports research on network technology and innovative network services. Campus networking is included in this area.

Cloud

- The Cloud area of the GÉANT Community Programme deals with Interoperable software stacks, aimed at providing cloud services based on open standards and protocols, and focuses on supporting the uptake of Cloud technologies. Both private and public clouds are of interest within this domain with the

focus on building, operating, monitoring cloud infrastructure, in a hybrid cloud approach to the provisioning of services for the NRENs and their constituent institutions.

Business Services

- This area focuses on organizational, information gathering/exchange and delivery aspects of services provided to the community and by the community.

Stakeholder engagement

- This caters for the support requirements of end users and the community at large with the aim to develop a framework for research engagement.

While these thematic areas are organised based on the above categories, there has been good collaboration between groups as well, including co-located meetings for SIG-NGN and SIG-TFN, which helped create awareness for the newly formed SIG-TFN. SIGs have also actively invited subject matter experts from other areas to present at their meetings, for example SIG-NOC, which held a security focused meeting. It is also acknowledged that several activities focus on cross-cutting themes like AI, sustainability, and gender.

These thematic areas are also shown on the GÉANT Community website [[TA](#)].

5 GÉANT Community Programme Development During GN5-1

In addition to evaluating the strategy and embarking on a new version as outlined in Section [Error! Reference source not found.](#), and reviewing and redefining the GCC members' role and responsibilities (described in Section [Error! Reference source not found.](#)), the GÉANT Community Programme has developed in various other areas during GN5-1, as summarised in this section. This includes:

- A CRM dashboard (Section 5.1)
- A new workshop to bring community representatives together and closer to the GCC (Section 5.2)
- Introduction of the TNC Community Hub (Section 5.3)
- A refreshed community mapping (Section 5.4)
- An improved outcome for the Innovation Programme in 2024 (Section 5.5)
- Reconsideration of the GÉANT Community Award (Section 5.6)
- Introduction of the GÉANT Community Principles (Section 5.7)
- Evolution of the TF/SIG portfolio (Section 5.8)
- Security Days (Section 5.)
- The creation of a new Events and Project Specialist role (Section 5.10).

5.1 CRM

In GN5-1, use of the CRM has expanded to include the GCP team . GCP events are largely created in Indico for participant registration and the CRM captures this data. A new dashboard for all the GCP activities, including TF/SIG meetings, NPAPW, and infoshares is now available. This has been an invaluable tool to facilitate reporting, understand trends in participation, and will soon be further optimised to ensure we benefit maximally from better data capture and data analysis. There have been considerable efficiencies gained. The various efforts and results involved are described below.

5.1.1 Development of the CRM Dashboard

The GCP Manager and Events and Project Specialist created a list of key attributes necessary to represent in the dashboard. The most important data points included the number of registered participants according to event type, NREN/organisation and country represented, collected at six-month intervals in aggregate as well as per event type. Whereas this was formerly exported into Excel sheets, it is now possible to spontaneously access and analyse the data with detailed visualisations. The dashboard currently presents data on a biannual, annual and semi-annual basis. It also presents data for each TF/SIG. Attributes covered include:

- Event name
- # event participants per organisation
- Participants countries
- Participants by organisation type

- # countries represented per meeting
- # organisations represented per meeting
- # unique participants by organisation

The main dashboard is shown in Figure 5.1 below.

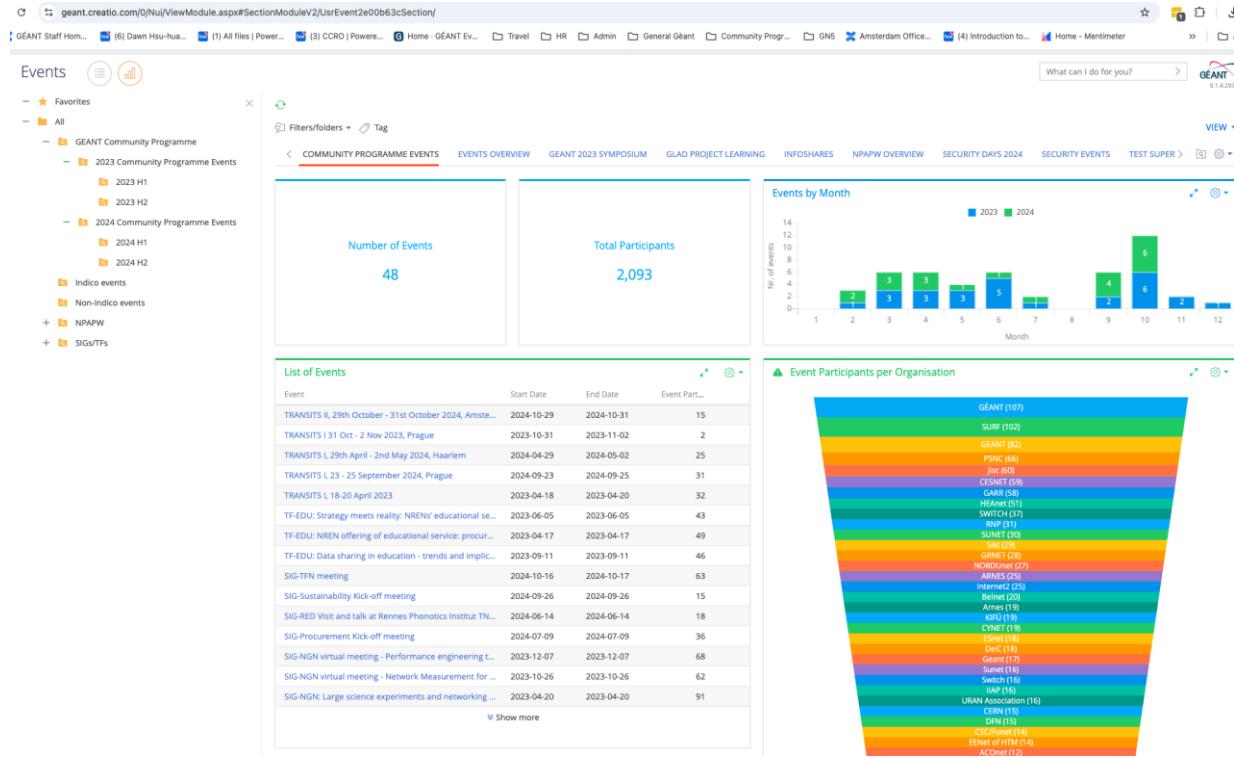


Figure 5.1: GÉANT Community Programme – CRM dashboard

5.1.2 Monthly Update of the Dashboard and Manual Adjustments

A monthly update to the dashboard is made, which requires some manual adjustments like importing new contacts into the CRM system. As it is new and a work in progress, the GCP team also cross references it with the Indico events system since some users do not always check the required box to link the two platforms. Additional activities that are not registered via Indico, such as TNC sessions, are still accounted for manually in an excel sheet.

5.1.3 Continuous Improvement

The current dashboard is still a prototype and requires continuous testing and improvement. Meetings with the CRM coordinator, GLAD (another active CRM user), Partner Relations, and other interested teams, is critical to both follow up on fixes and new requirements. As the CRM is fed by Indico, the events management system used by GÉANT, coordination is also needed with the Indico team. In the short term, attention will be made on transferring gender data from Indico to the CRM so gender equality can be monitored, ensuring organisation names are standardised, and introducing standard naming conventions for events. Tracking registered participants vs. Actual attendees would also be valuable. Training of staff to ensure data is properly inputted and collected is a key factor. Using data effectively to monitor and evaluate the GCP's impact and strategically plan for future initiatives is a goal that will continue in GN5-2.

5.2 TF/SIG and GCC Collaboration

The GCP has attempted various ways to engage the GCC in the activities it oversees. GCC members were paired with specific TF/SIGs, TF/SIG Coordinators were invited to GCC meetings, and TF/SIG developments and changes were regularly shared via emails with the GCC. Despite these initiatives, engagement was largely reporting and updating versus active collaboration. To bring the GCC and TF/SIGs closer and facilitate collaboration, a 2-day interactive workshop was organised to reflect on and evaluate the GCP strategy and small group work to brainstorm on new elements for the next strategy. Small groups continued to work after the workshop and met online to follow up on feeding their input. Two trainings were also provided during the workshop: one on best practices in communication by the GCP Marcomms colleague and another on GÉANT's Code of Conduct by GLAD.

Working together at the strategic level brought insights from the TF/SIG community to the GCC and vice versa, which would not have been possible otherwise. It also allowed TF/SIG members to learn about each other's groups, share best practices, and identify areas of cross collaboration. The workshop was well received and will be continued annually to jointly evaluate results, identify areas of collaboration between the groups, especially as more cross-cutting themed SIGs are established, and plan for future initiatives.

5.3 Community Hub at TNC

TNC, the world's largest research and education sector event, can be considered GÉANT's ultimate community event. While its organisation and execution are largely conducted by GN5-1 Work Package 2, it was recognised that a more explicit community space and spirit was needed, especially as the conference grew larger and more formal. The Community Hub was thus introduced as a new element at TNC during GN5-1. The Community Hub at TNC23 was poorly positioned within the venue and had minimal attendance, so more preparation took place and a better space was allocated for TNC24. An open call to Community mailing lists was made and 25 organisations responded. The programme covered 42 sessions, including both demos and round-table discussions, which were scheduled alongside TNC's main programming. Ad-hoc spaces were also available for spontaneous sessions. Activities ranged from technical ones such as Realistic traffic simulation with high-precision timestamp-based replay to a live feed with URAN, the Ukrainian NREN. It was also the main hub for GLAD's Future Talent programme. 600 conference participants visited the Community Hub over the course of 3 days and reported high levels of satisfaction with the initiative according to survey results.

The top attended sessions are listed Figure 5.2.

Top 5 most attended sessions @Community Hub 2024

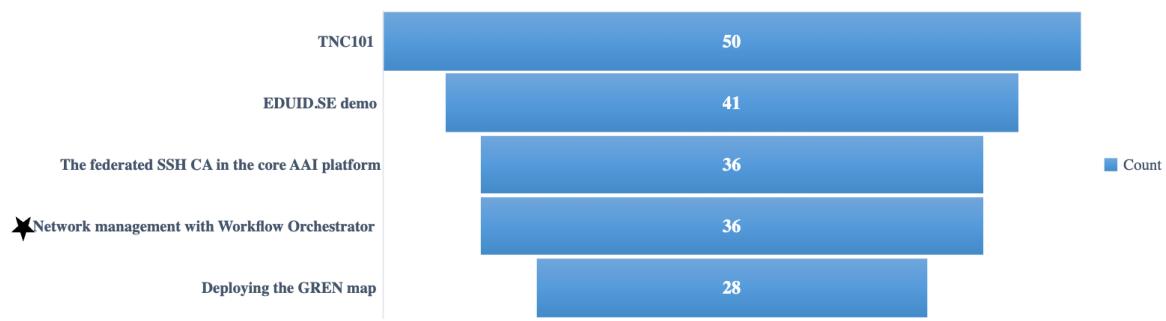


Figure 5.2: Attendance count analysis

Participation per day is found in Figure 5.3, below.

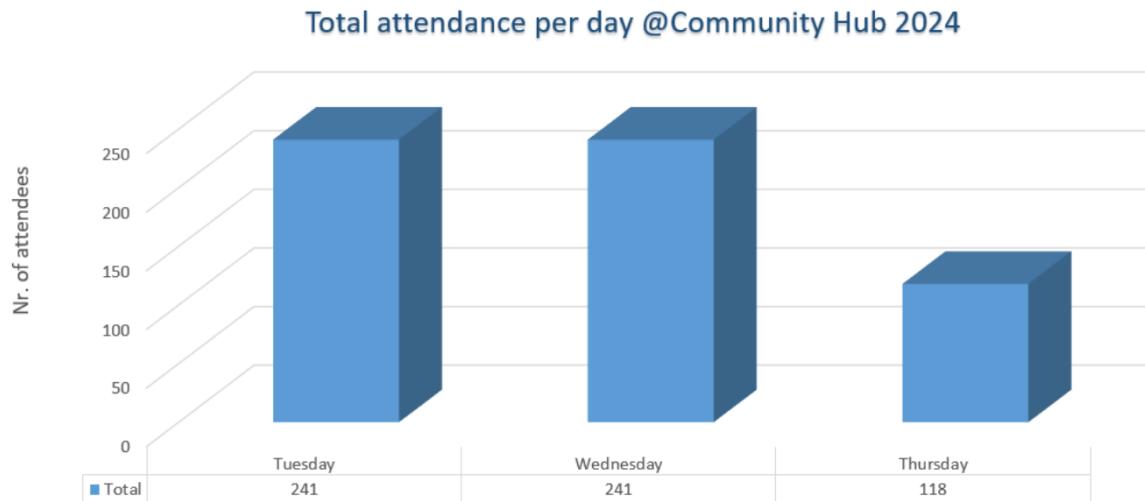


Figure 5.3: Attendance count analysis (600 total attendees)

5.4 Community Mapping

The GÉANT Community Programme has strong participation of NRENs and research and education-related institutions across Europe and globally with over 300 unique organisations represented in its activities during GN5-1. Nonetheless, there are adjacent communities in the Research and Education sector that address either overlapping thematic areas or highly complementary ones. A mapping exercise was conducted at the start of the first GCP strategy and was updated in 2024 to assess which organisations may be strategic to reconnect with and strengthen collaboration. EUNIS is one of the organisations identified. A TF-EDU Steering Committee member was recently appointed its new President of the Board, so the link was an easy one. It was discussed that Security could be a common area of collaboration as both programmes had relevant SIGs and we will also explore how TNC could be more attractive and relevant for the EUNIS HEI audience.

5.5 GÉANT Innovation Programme

The GÉANT Innovation Programme was established in 2021, and two cycles were completed in 2023 and 2024 during GN5-1. The GÉANT Association continued to contribute EUR300k annually to support an Innovation Programme for specific research projects carried out by the GÉANT community, i.e. GÉANT Member NRENs, universities, research institutions or other such legal entities to which a GÉANT Association Member NREN provides services.

The maximum funding per project through 2023 was EUR30k, with 10 projects awarded and was increased to EUR50k in 2024 with 5 projects awarded. The GÉANT Innovation Programme is discussed in more detail in Section 7.

5.6 Adapting GÉANT Community Award

The GÉANT Community Programme took over the management of the GÉANT Community Award for TNC22 and created a new approach that allowed the research and education community to publicly nominate and vote for candidates via a devoted website. Nomination criteria and award categories were outlined on the website and participants used an online form for submitting nominations [[GCA](#)]. An Award Committee, consisting of the GCC

Chair, the CEO of GÉANT, the Chair of that years TNC Programme Committee, the Chair of the GÉANT Board, and the CEO of the TNC hosting NREN, created a shortlist of nominees. The nominees were then posted on the website and the community had a 3- to 4-week period to cast their votes. The Committee then made a final decision. While the first round of public engagement was robust, including 689 votes, subsequent years have seen a drop with 454 votes in 2023 and 421 in 2024. To address the declining engagement and informal process of the Award Committee, the approach of the Community Award has been reconsidered and will be adapted. The GÉANT Community Award is discussed in more detail in Section 8.

5.7 GÉANT Community Principles

The first of the GÉANT Community Principles thematic areas launched, focusing on Gender Equality [[GENDEREQ](#)]. A BoF meeting at TNC on 13 June took place with approximately 60 participants where successful initiatives in the community focused on gender were highlighted as well as the results of the initiative including increased sign-ups to the GÉANT Mentorship Programme and a number of applications to WINS, the Women in IT Networking at SC (SuperComputing) programme [[SC_WINS](#)].

An initial soft launch of the Open-Source Software principles was also discussed at TNC in the “Digital Freedoms” parallel session [[OPENSOURCE](#)]. This has created a lot of interest in the process, with a particular focus on the interplay with procurement and purchasing processes at NRENs.

5.8 TF/SIG Portfolio Changes

As a result of the TF/SIG lifecycle process, the following TFs/SIGs were established, closed or transitioned to self-sustainability during the GN5-1 project:

Established:

- Special Interest Group on Sustainability (SIG-Sustainability) [[SIG_SUSTAINABILITY](#)]
As CSRD and national CO2 requirements are further incentivising NRENs to consider environmental sustainability a priority, HEAnet spearheaded a new SIG-Sustainability. It was joined by Jisc, SURF, and GÉANT and interest continues to grow as NRENs share knowledge on how to document and reduce CO2 emissions and tackle CSRD.
- Special Interest Group on Procurement (SIG-Procurement) [[SIG PROCUREMENT](#)]
While SIG-MSP occasionally covered the subject area, the GÉANT Procurement team recognised a gap in the community for their procurement peers at other NRENs. Although the focus primarily is on EU level procurement, as all SIGs, it remains open to all.
- Special Interest Group on Artificial Intelligence (SIG-AI) [[SIG_AI](#)]
AI is a top agenda item for nearly every organisation these days. The new SIG AI began at TNC24. With the help of a newly established SC-Committee, the mailing list has gained 70 registered participants within only 5 months.
. It focuses on the context of National Research and Education Networks (NRENs). The group explores how AI can enhance cybersecurity, above-the-net services, network management, and network services currently offered by GÉANT and member NRENs. The group also follows relevant AI policy at the EU level.

Closed:

- Special Interest Group on Multimedia (SIG-Multimedia).

- It was decided that this topic did not require its own SIG but could be addressed by TF-EDU or SIG-NGN.

Transitioned:

- Task Force on Research Engagement Development has transitioned to Special Interest Group on Research Engagement Development.
 - This group completed a white paper as part of its original task as a TF and has evolved to a SIG with a charter.
- Task Force on eHealth (TF-eHealth) has transitioned to Special Interest Group Digital Health Data.

5.9 New Events and Project Specialist Role

With over 50 GÉANT organised events (online/hybrid/in-person) annually and various teams administering them, it was recognised that a new role was necessary to not only manage the Community level events but create a standard operating procedure for small to medium sized events (up to 200 participants) organisation-wide. Bringing additional consistency, rigor, and professionalism to all GÉANT events ensures a positive experience for our community and also supports our growth in this area. The role was created at the end of 2023 and successfully recruited within 2 months. The Events and Projects Specialist started in February 2024 and has taken the role of supporting TF/SIGs, particularly SIG-TFN, SIG-NOC, SIG-MSP, NPAPW, Security Days, Community Hub, CEO track at TNC, and TRANSITS (TF-CSIRT). She has also been instrumental in developing the GCP CRM Dashboard. As this is a new role, it will be closely monitored and adjusted in the first years and evaluated at the end of GN5-2. GÉANT teams who have worked with the new role to date have already reported highly positive results. The goal will be to roll out an organisational wide procedure for events in GN5-2 and to create a streamlined process for data collection and analysis to inform future event planning.

6 Thematic Area Support

This section presents a summary of the activities that have taken place in GN4-3 to support each thematic area. It also includes one-off workshops and collaborative activities, and an assessment of the activities' impact and reach.

6.1 Overview

During the two-year period of GN5-1, registration for GÉANT Community Programme meetings and events have held steady. In 2023, there were 1935 registered participants at 30 events, including TF/SIG meetings, one-off workshops and collaborative projects. In 2024, through October (the writing of this report), there were 1886 with several events in November and December not yet accounted for in the figure.

In Period 1 (1 January 2023 – 31 Dec 2023), 30 events took place, totalling 1,935 registered participants:

- 22 Task Force and Special Interest Group meetings were held (TF-CSIRT: 3; SIG-ISM: 1; SIG-Marcomms: 3; SIG-NGN: 3; SIG-NOC: 2; SIG-MSP: 2; SIG-CIIS: 3, SIG-DHD: 2, TF-EDU: 3)
- 3 “one-off” workshops (Open Source software: 1; GIP showcase: 1; GCP Coordinators 1)
- 5 collaborative project meetings (REFEDS: 3; Security Day: 1; Mobility Day: 1).

In Period 2 (1 January 2024 – 31 October 2024 (time of writing), 35 events took place, totalling 1886 registered participants:

- 30 Task Force and Special Interest Group meetings (TRANSITS: 3; SIG-ISM: 2; SIG-Marcomms: 3; SIG-NGN: 2; SIG-NOC: 2; SIG-MSP: 2; SIG-CIIS: 2, SIG-DHD: 1, TF-EDU: 2; SIG-RED: 1; SIG-Sustainability: 2; SIG-Procurement: 2; SIG-TFN: 2; SIG-AI: 1; SIG Marketplace: 3)
- 1 “one-off” workshops (GIP showcase)
- 4 collaborative project meetings (Security Day; TNC Community Hub, Gender Equality, NPAPW)

A note that with new groups emerging and old ones phased out, the thematic categories have been revised in GN5-1 to accommodate this evolution. Most notably are the addition of Business Practices and Stakeholder Engagement. These changes are reflected in the GÉANT Community Programme website, which is the primary reference point for all GCP activities [THEMATIC].

6.2 Security

6.2.1 TRANSITS (TF-CSIRTS)

Period 1

In 2023, 3 TF-CSIRT meetings took place, with a total of 470 registered participants and 2 TRANSITS training events, with a total of 57 registered participants; Transition to the Open CSIRT Foundation.

TF-CSIRT has transitioned from its base at GÉANT to a new permanent home within the Open CSIRT Foundation. This has led to less focus for GÉANT on the organisation of the actual TF-CSIRT meetings, as agreed with the new

project partners, and more energy on renewing and supporting TRANSITS training. The TF-CSIRT meetings continue to be well-supported and the usual pattern of three events were held in 2023: in Bilbao, Bucharest, and Stockholm.

Two TRANSITS training events were delivered in 2023, both of which reached capacity attendance and had waiting lists. There was also work done on the redevelopment of the Secure Communications module and the training exercise used as part of the course.

The focus for TRANSITS in 2024 is to renew TRANSITSII training and to focus on refreshing the materials for the Technical and Operational modules.

Period 2

In 2024, 4 TRANSITS meetings took place, with 99 registered participants.

TRANSITS is financially self-sustaining but aligned with the Community Programme due to the importance of training to the GÉANT community. New slide decks for three of the five TRANSITS modules were developed in this period (Secure Communications, Organisational and Legal) and the review of the final two units will take place in the second half of 2024.

- The three training events for the second half of 2024 included the relaunch of TRANSITSII, a second TRANSITSI with open registration and a bespoke TRANSITSI for RESTENA. All these events are fully booked.
- The first TRANSITS I meeting took place 29 Apr-2 May in Haarlem, the Netherlands with 23 registered participants.
- The second TRANSITS I meeting took place 23-25 September in Prague, with 31 registered participants.
- The third TRANSITS II meeting took place 29-31 October in Amsterdam, with 15 registered participants.
- The final TRANSITS I meeting takes place 5-7 November in Luxembourg, with 30 registered participants.

TF-CSIRT fully transitioned out of the GÉANT community space in GN5-1 Period 2.

6.2.2 Special Interest Group on Information Security Management (SIG-ISM)

Period 1

In 2023, 1 SIG-ISM meeting took place , with a total of 31 registered participants.

A hybrid meeting was held in Trondheim, Norway from 3 to 4 May, with 31 participants. The increasing sophistication of cyber threats makes it imperative for higher education institutions and governmental entities to adopt effective security information management strategies. To address these concerns, the SIG-ISM meeting focused on insights and actionable strategies to keep entities aware of and safe from cyber threats, including international collaborations to promote cyber resilience, emerging cyber threats, preparing for the NIS2 directive, the importance of sharing agreements for cyber threat intelligence and how organisations can collaborate more effectively to respond to cyber attacks in a coordinated manner.

Period 2

In 2024, 3 SIG-ISM meetings took place, with a total of 131 registered participants.

At the first meeting co-located with the Security Days on 9 Apr with 60 registered participants, SIG-ISM addressed critical aspects of security including the role of legislation, implementing strategies, and bridging the gap between the two. GÉANT, SURF and CARNET presented the role of legislation in guiding operational

frameworks and policy formulation and emphasised compliance and adaptation to legal changes. AARC's Community Policy lead discussed practical implementation strategies that bridge the gap between policy and action through process optimisation and efficiency enhancement. GÉANT's SOC team provided an overview of what they do and what is outside their scope. Lastly, Belnet presented on training and awareness.

The second SIG-ISM meeting was a TNC24 side session, with 53 registered participants; a community meeting conducted with WISE. Security professionals from NRENs and e-infrastructures discussed developments and priorities in the areas of security management, risk management and incident response in e-infrastructures. An overview of 25 years of security community activities in R&E was presented, and an inventory of future topics to work on was discussed. New Steering Committee candidates were also named.

A third SIG-ISM took place in Amsterdam 8-9 October with a total of 18 registered participants. In this meeting, the new Steering Committee was introduced. RESTENA presented its BCM strategy based on ISO 22301, and SUNET shared its efforts towards ISO 27001 certification, focusing on: automating security audits for governance, risk, and compliance. GÉANT provided updates on the Security Roadmap, implications of the NIS2 directive for research and education, insights on the upcoming CTO workshop and the CoreAAI platform for secure data sharing. The importance of threat intelligence sharing and a Security Intelligence Hub for the community was also discussed by GÉANT, as such, Cyber Security Month activities since 2019 were recapped.

6.3 Trust & Identity

6.3.1 REFEDS

Period 1 & 2

Although not coordinated by GÉANT, GÉANT continues to collaborate with REFEDS and links the REFEDS website on the GÉANT Community Programme's thematic areas page under Trust & Identity [[THEMATIC](#)], [[REFEDS](#)].

6.4 Network

6.4.1 Special Interest Group on Network Operations Centres (SIG-NOC)

Period 1

2 SIG-NOC meetings took place in 2023, with a total of 109 registered participants.

A hybrid meeting was held in Stockholm, Sweden from 16 to 17 May 2023, with 62 registered participants, on the theme “The insights of your network. Do you see what I see?”. Topics discussed included “Why 5G when we have Wi-Fi?”, “NOC Tools” and “Risk Management”. EHU/UPV shed light on the exciting possibilities of Smart Networks for Industry (SN4I), showcasing the integration of academic experimentation with Industry 4.0; Sikt presented the Argus monitoring tool, highlighting its capabilities in network monitoring and management; RNP introduced OpenNetaudit, an automation tool that simplifies network auditing tasks and enhances security; and CSC (Finland) explored fibre infrastructure quality assurance using inline OTDR.

A second hybrid meeting was held in Dublin, hosted by HEAnet, from 14 to 15 November 2023, with 47 registered participants. The theme was “Finding NEMO” and several presentations focused on the deployment and development of NeMo, the DDoS attack detection and mitigation solution for NRENs. In addition, presenters discussed providing NREN support for large scale data transfers and ESnet shared lessons learned from their automation journey. Finally, the SIG-NOC survey results were shared, with keen interest on NREN’s rate of automation and the types of tools used.

Period 2

Two SIG-NOC meetings took place in 2024, with a total of 86 registered participants to date.

The first SIG-NOC meeting took place with a total of 54 registered participants. This was the 20th SIG-NOC meeting and was hosted by CSC/Funet in Helsinki on 7-8 May. The meeting focused on pivotal themes shaping SOC/NOC operations. Presentation topics included data centres and monitoring object-storage services by CSC/Funet, fibre-based sensing technologies by Sikt, and SOP methods by NORDUnet. A panel on SOC/NOC boundaries by GÉANT, Jisc, and SURF was also held. On day two of the meeting, the focus was on NOC Monitoring and NOC life, with presentations on network surveillance integration by SUNET and the automation journey by HEAnet. The final session was on Monitoring/NIS2 with talks on monitoring latency and jitter by GARR, NIS2 Directive adaptation by CSC/Funet and GÉANT, and migration challenges by GÉANT. A second SIG-NOC meeting will take place 13 November in Berlin, co-located with the STF meeting. At present, there are 32 registered participants but this is expected to increase as the date grows closer.

6.4.2 Special Interest Group on Next Generation Networks (SIG-NGN)

Period 1

3 SIG-NGN meetings took place in 2023, with a total of 219 registered participants.

A hybrid meeting was held in Prague, Czech Republic on 20 April, with 90 registered participants. The main themes of the meeting were large science experiments and networking futures. The meeting was hosted jointly with the LHCONE meeting in Prague and featured presentations from the largest science communities, including HEP, SKA and DOE, about their future vision and requirements. Networking experts from the NREN community presented current and future network capabilities.

A virtual meeting was held on 25 October, with 62 registered participants. The main themes were related to network measurement methods and their significance when engineering networks. Drawing insights primarily from specialists from ESnet, the attendees got an overview of packet sampling, in-band network telemetry, and perfSONAR, amongst other related topic areas. The participants reflected on whether the data currently collected is sufficient and, if not, what needs to be done to improve it.

A final virtual meeting was held on 7 December, with 67 registered participants. This meeting focused on 'Performance Engineering the Research Network for Science'. Presentations by CERN, ESnet, CSC/Funet and GÉANT addressed strategies and methods for exploiting measurements to engineer networks for the best possible performance with attention on data and computing workflows from research applications and instruments, as well as the observed behaviour of traffic on the networks.

Period 2

2 SIG-NGN meetings took place in 2024, both co-located to maximise attendance, with a total of 133 registered participants.

The first had 69 registered participants on 8-9 April, co-located with the LHCONE meeting at INFN in Catania, Italy. The meeting focused on technologies for the sharing of existing physical networks (overlays, underlays, spectrum sharing) and how these enable mission-specific network services. Network architecture for intercontinental connectivity, including policies and technologies for links. Updates on connecting Australia to the world, the Medusa cable, and planned links across the Atlantic were shared. The evolution of intercontinental R&E connectivity was also presented and discussed including the evolution of LHC networking. A broad range of presenters represented diverse stakeholders, including Indiana University, KISTI, Ciena, SURF, Jisc, CERN, GARR, Internet2, ESnet, NORDUnet, and GÉANT.

The second was co-located with the NORDUnet conference as a side meeting, including a joint agenda with SIG-TFN. It was held on 9 September in Bergen, Norway with 64 registered participants. This second meeting was a half day agenda as it was shared with the new SIG-TFN. Presentations included an update on optic fibre sensing by HEAnet and Sikt, exploring the use of low earth orbits by ESnet and Jisc, and orchestrator, an open-source network and service orchestration tool originally built by SURF, recently adopted by GÉANT and HEAnet.

6.4.3 Special Interest Group on Time and Frequency Networks

Period 2

3 SIG-TFN events were held in the second period of GN5-1, with a total of 181 registered participants.

A Time & Frequency workshop held on 7-8 February 2024 in Zurich, with 54 participants. This informed the official launch of SIG-TFN in the spring. A Steering Committee was subsequently established, a coordinator appointed, a Charter drafted, and a new webpage created.

An initial meeting was co-located at the NORDUnet conference and jointly held with SIG-NGN on 9 September in Bergen, Norway with 64 registered participants. This was a half day agenda announcing the new SIG with two presentations- one on White Rabbit by RISE and the other a time and frequency update by Sikt and CSC. This was a strategic meeting that allowed SIG-TFN to promote itself with the SIG-NGN audience as well.

SIG-TFN's first full official meeting was hosted by the University of Amsterdam on 16-17 October with 63 registered participants. With in person attendance at full capacity and more than 100 mailing list members, a new, strong and passionate scientific community is born, focusing on metrology and some challenging use cases, from redefining the SI second to detecting gravitational waves, and testing new physics.

6.5 Cloud

6.5.1 Special Interest Group on Cloud Interoperable Software Stacks (SIG-CIIS)

Period 1

3 SIG-CIIS meetings took place in 2023, with a total of 114 registered participants.

A hybrid meeting was held in Barcelona, Spain on 8 March 2023, with 23 registered participants. The meeting was co-located with the CS3 conference and comprised a section on “NRENs building clouds” and a set of talks on cloud topics of relevance for the NRENs cloud community: ABEBox – end-to-end encryption for cloud-based file-sharing services; OpenShift and Kubernetes at CERN; and TripleO for the under and upper cloud.

A second hybrid meeting, co-located with TNC23, was held in Tirana, Albania on 5 June, with 50 participants. The meeting was held jointly with the GÉANT Cloud Framework meeting and covered topics such as hybrid cloud use cases, tools (including CERNBox, SIEVA and SHOC) and procurement.

A final hybrid meeting was hosted by SWITCH and took place in Zurich on 13 November with 41 registered participants. Storage Services, containers, and Kubernetes were the focus of the meeting. NREN representatives from CESNET, Sikt, PSNC, Rep of Armenia and GARR reported on their activities related to these areas and the group shared experiences and best practices. A report was also provided on ScienceData, used to share scientific data, and the SCHOC tool to access HPC resources.

Period 2

2 SIG-CIIS meetings took place in 2024, with a total of 43 registered participants.

The first was co-located with the CS3 conference at CERN on 13 March with 25 registered participants. The second was a side meeting at TNC on 9 June in Rennes with 25 registered participants. At the March meeting, inputs on hybrid clouds support within the NRENs were shared by CSC = Finland, KIFU = Hungary, and HEAnet - Ireland. A summary of the Cloud work package in GN5 and eduMEET's 4.0 release were also provided.

At TNC24, there were 30 registered participants at the SIG-CIIS side meeting. It focussed on Trusted Research Environments, and NeIC, EGI, SURF all provided inputs on their vision for the role NRENs can play in this domain, and in the handling of sensitive data in general. NeIC discussed their experience in Trust in Sharing Sensitive Data, while SURF and EGI introduced their trusted research environment projects. Finally, GÉANT presented a summary of the e-Health survey to NRENs.

6.5.2 Open Cloud Mesh

Period 1 & 2

GÉANT continues to collaborate with Open Cloud Mesh by ensuring a link to their website remains on the GÉANT Community Programme's thematic areas page under Cloud [[THEMATIC](#)].

6.6 Business Practices

6.6.1 Special Interest Group Management of Service Portfolios (SIG-MSP)

Period 1

2 SIG-MSP meetings took place in 2023, with a total of 76 registered participants.

A hybrid meeting was held in Zeist, The Netherlands on 23 March 2023, with 30 registered participants. The first part of the meeting focused on services for campuses, namely the development of a campus ICT infrastructure service portfolio and integrating processes for the individual services in such a way that the institute experiences a single point of contact. The afternoon session focused on digital strategies: digital research and educational strategies and trends. The meeting concluded with a presentation on crisis response activities, such as analysis of resilience regarding brownouts, dependence on sea cables, detecting and reacting to sabotages on GÉANT's fibre footprint and other possible types of crisis response activities.

A second hybrid meeting was hosted by GRNET and took place in Athens from 30 to 31 October, with 46 registered participants. A meeting of SE European NRENs was planned directly after so several new participants from SEE joined and presented at the meeting. The primary focus was on the "Next big thing". NREN representatives shared the latest services in their portfolios and best practices on AI's role in security services and network monitoring. The increasing importance of AI in NREN service portfolios and the profound impact it can have on the future of NRENs was acknowledged by all participants. The Chairman of GRNET, provided a specific use case by sharing trends in AI and potential implications for GRNET's overall strategy and service portfolio.

Period 2

2 SIG-MSP meetings took place in 2024, with a total of 86 registered participants.

The first was held on 13-14 March, hosted by DeiC in Copenhagen with 36 registered participants. In this meeting, discussions focused on 2024 risks and challenges for NRENs, emphasising service sharing, cost modelling, and strategic planning. DeiC provided updates on cybersecurity initiatives and SLA calculation methodologies, highlighting concerns over physical infrastructure threats. PSNC presented findings from a foresight study on future NREN challenges, prompting a round table on mitigating these issues. HEAnet shared growth metrics from the OCRA 2024 cloud tender, underlining widespread adoption across Europe. Business model innovations were

explored in an interactive session led by DFN, echoing participant interest in enhancing service-sharing practices. The meeting concluded with updates from GÉANT and discussions on research data infrastructure, highlighting collaborative efforts in shaping the future of NREN services.

The second meeting took place on 23-24 October hosted by PSNC in Poznan, Poland, with 50 registered participants. It will be reported on in the GN5-1 Period 2 Management Report.

6.6.2 Special Interest Group on Sustainability (SIG-Sustainability)

Period 2

2 SIG-Sustainability events took place in 2024, with a total of 55 registered participants.

The new SIG-Sustainability launched at TNC24 with a Birds of a Feather (BoF) session at TNC24 in Rennes on 12 June, with approximately 40 participants. This was its first public meeting. A key topic explored was how to secure senior leadership buy-in, a pivotal step in driving the NRENs' sustainability agenda. Strategic direction and establishing core goals was also an important discussion point due to the expansive nature of sustainability. The discussion then focused on defining metrics for measuring and reporting progress, encompassing Corporate Sustainability Reporting Directive (CSRD) reporting, internal metrics, and alignment with UN Sustainable Development Goals (UN SDGs). Additionally, the group identified priority impact areas such as staff travel, energy consumption, and data centre operations. Looking ahead, there was particular interest in understanding the impact of TNC25, with plans to baseline this event, leveraging the experience from similar initiatives at Jisc. The Steering Committee was subsequently established, with a coordinator appointed, a Charter drafted, and a new webpage created.

A virtual kick-off meeting of the SIG was held on 24 September, with 15 registered participants. At the kick-off meeting, HEAnet presented its Strategy and Climate Action Plan, Jisc shared its sustainability strategy and reporting, GÉANT discussed learnings from its first CO2 report, and SURF introduced highlights from its CSRD reporting process. It was agreed that the next meeting would engage more discussion with participants on the direction and priorities of this new SIG.

6.6.3 Special Interest Group on Procurement (SIG-Procurement)

Period 2

3 SIG-Procurement events took place in 2024, with a total of 76 registered participants.

The first meeting, which confirmed the creation of SIG-Procurement took place at the TNC Community Hub on 10 June with 15 participants. This meeting confirmed its relevance for the community as a platform for networking and sharing best practices related to procurement in the R&E sector. The discussion focused on identifying the possible participants and their roles within the SIG. Participants brainstormed and explored potential topics of interest, such as procurement challenges, key suppliers (internal and external facing), procurement, supplier management, and finance technology platforms, as well as sustainable procurement policies. Steering Committee was subsequently established, a coordinator appointed, a Charter drafted, and a new webpage created.

The second was a virtual kick-off meeting held on 9 July, with 36 registered participants.

The third is a virtual meeting on 4 November with 25 registered participants to date. This meeting will focus on Big Tech and will be reported on in the GN5-1 Period 2 Management Report.

6.6.4 Special Interest Group on Artificial Intelligence (AI)

Period 2

2 SIG-AI events took place in 2024, with a total of 32 participants to date.

The first meeting, which confirmed the creation of a new SIG on AI for NRENs took place at the TNC Community Hub on 10 June with 20 participants. This was the first meeting for SIG-AI and confirmed its relevance for the community. The meeting was followed by several one-to-one discussions, for which TNC24 provided an ideal forum. SIG-AI will serve as a platform for the exchange of expertise and best practices in the areas of AI and above-the-net applications, AI and cyber security, AI in network automation, and AI policy. A Steering Committee was subsequently established, a coordinator appointed, a Charter drafted, and a new webpage created

The first SIG-AI meeting will take place on 11 Dec, hosted by PSNC in Poznan, Poland. It will be reported on in the GN5-1 Period 2 Management Report. At 2 December, there were 32 registered participants..

6.7 Stakeholder Engagement

6.7.1 Special Interest Group on Research Engagement Development (SIG-RED)

Period 1

No meetings of this TF/SIG were held in 2023. The Steering Committee redefined the scope of the group and it was agreed to rename the activity as a Special Interest Group rather than a Task Force. Its aim will be to share best practices rather than focusing on a specific topic of work. SIG-RED planned to meet in person at TNC 2024 and in Q3 of 2025.

Period 2

Three SIG-RED meetings took place in 2024, with a total of 43 registered participants to date.

One SIG-RED meeting took place during the period as a side meeting at TNC on 9 June in Rennes, with 16 registered participants. A new Coordinator, from IUCC, also started in this period. This group transitioned from a task force to a special interest group in this time period. At the SIG-RED TNC side meeting, participants from 4 continents discussed how best to engage and understand researchers, shared examples of how research engagement occurs in other countries and concluded with next steps for the group.

SIG-RED also organised an inaugural site visit in Rennes to the Photonics Institute. 18 participants were given a tour of the facility allowing them to learn about the latest developments in material sciences. This also provided an opportunity for the group to gain an understanding about the way such a research group works and to offer advice about ways to tackle some of the challenges the research facility was facing with regards to international collaboration and connectivity.

The third SIG-RED meeting took place on 19 November and was hosted by NIKHEF in Amsterdam with 17 registered participants.

6.7.2 Special Interest Group on Marketing and Communications (SIG-Marcomms)

Period 1

3 SIG-Marcomms meetings took place in 2023, with a total of 175 registered participants.

A hybrid meeting was held in Kajaani, Finland on 21 to 22 February, with 57 registered participants. The meeting was combined with a visit to the LUMI data centre and focused on the topics of HPC communications, SDGs promotion, Marcomms tools and the future of social media. The meeting brought together several NRENs involved in EuroCC, creating opportunities for networking and further collaboration.

Another hybrid meeting, co-located with TNC23, was held in Tirana, Albania on 9 June, with 58 registered participants. The topics discussed included blogs promoting the impact of NRENs globally, social media and various updates such as on the GRENA map and the Compendium website.

A final meeting was held on 5 October, with 60 registered participants. It was originally planned to be hosted in Yerevan, Armenia by ASNET-AM. However, due to the unstable geopolitical situation between Armenia and Azerbaijan, the meeting was moved fully virtual. The focus of the meeting was on project communications, specifically on how to communicate impact and on how to engage with stakeholders. Several NRENs presented their respective strategic approaches.

Period 2

3 SIG-Marcomms meetings took place in 2024, with a total of 146 registered participants.

The first was a hybrid meeting with 60 registered participants hosted by ARNES in Ljubljana, which took place on 5-6 March. SIG-Marcomm's March meeting was a combination of workshops, presentations and small-group brainstorm session. Updates from NRENs on their marcomms activities were presented by Arnes, ASNET-AM, and GRENA, showcasing projects ranging from hackathons to educational initiatives. GARR shared insights on connecting with end-users through innovative approaches such as "Network Invaders," a videogame based on network environments. Belnet discussed the importance of cybersecurity awareness, highlighting collaborative efforts within the GN5-1 project.

The second meeting was a side session at TNC24 on 9 June in Rennes, with approximately 30 participants. The focus was on AI for Marketing and Communications. CANARIE, Jisc, SWITCH and GÉANT highlighted AI's ability to boost creativity, efficiency, and streamline processes. They discussed tools such as Jasper, Copy.ai, Grammarly, and ChatGPT for content creation and editing as well as AI-driven image and video editing tools for producing visuals. Lightning talks providing use cases of AI tools were delivered and featured customer support through virtual assistants, optimising social media management by scheduling posts and analysing engagement. Ethical considerations were also underscored regarding bias in AI algorithms and the need for transparency, user control, and data security. The discussions emphasised that while AI offers immense potential, human oversight and ethical frameworks remain essential.

The third was a virtual meeting held on 16 October with 56 registered participants. The meeting featured the upcoming Cybersecurity month programme, Belnet's branding exercise, how to attract user communities with the use case of ASNET's supercomputer, and group discussions on social media and newsletters.

6.7.3 Task Force on Education (TF-EDU)

Period 1

3 TF-EDU meetings took place in 2023, with a total of 146 registered participants.

A virtual meeting was held on 17 April with 49 registered participants, on the topic of educational service offerings (procured or not procured). During the meeting, a number of NRENs, including those of Ireland, Norway, Poland and Croatia, shared their strategies for procuring or developing educational services in a lightning talk format.

A hybrid meeting, co-located with TNC23, was held on 5 June in Tirana, Albania, with 50 participants. The main theme of the meeting was “Strategy meets reality: NRENs’ educational services strategic planning and implementation”. The challenges of using commercial services (IaaS or SaaS), as well as the benefits and impacts of moving towards procured offerings, were discussed. A presentation was given on the trends and actualities emerging from the TF-EDU annual survey results. This was followed by updates from identity and education projects (MyAcademicID, Edu Wallets, DC4EU) and Erasmus Without Paper. The NRENs from Brazil, the UK, Portugal and Israel shared their strategies for supporting education, which were then discussed in a breakout session.

A final hybrid meeting was held as a side meeting at the NORDUnet Community Workshop with 47 registered participants. The Digital Credentials for Europe (DC4EU) project shared their insights on the integration of microcredentials and digital credentials into wallets to help participants gain a comprehensive understanding of how these credentials can be seamlessly integrated and mutually complement each other. The Trust Framework was also presented by Feedbackfruits and inHolland.

Period 2

2 TF-EDU meetings took place in 2024, with a total of 70 registered participants.

The first was a side meeting at TNC on 9 June, with 45 registered participants. The latest findings from the fifth annual NREN educational services survey were shared, highlighting their expanding global scope and current trends, setting the stage for discussions on standardisation and interoperability in educational ecosystems. This was followed by an interactive session exploring the benefits and challenges of interoperability. Participants engaged in lively discussions on the pressing use cases and the critical role NRENs can, and should, play in these processes. SURF presented the innovative Digivisio and Npuls projects, showcasing the synergy between national initiatives and EU infrastructure. The draft reference architecture of the European University Alliances sparked insightful discussions on future collaborative opportunities. The second part of the meeting focused on Trust & Identity, with GÉANT and SUNET discussing foundational services such as MyAcademicID and Edu Wallets. This was followed by updates on open educational standards and badges.

The second was a hybrid meeting co-located with Learning Impact Europe conference on 9 October in Barcelona with 25 registered participants.

6.7.4 Special Interest Group on Digital Health Data (SIG-DHD)

Period 1

2 SIG-DHD meetings took place in 2023, with a total of 45 registered participants.

The Steering Committee slightly redefined the scope of the group, focusing more on handling sensitive data via required infrastructures and the secondary usage of health data. TF-e-Health was also changed to Special Interest Group-Digital Health Data. It has been acknowledged that the main community focus for EHDS will be on its HealthData@EU component, and the usage of health data for research. In 2023, the SIG-DHD started organising webinars with key actors in the domain of Digital Health on the establishment of Trusted Research Environments and Secure Processing Environments for research.

The first webinar was provided by Amazon AWS and held on 10 May, with 25 registered participants.

A workshop was held jointly with EGI at TNC23 on 9 June, with 20 registered participants. The event focused on the latest updates from the EC side, and specifically on the status of the European Health Data Space (EHDS) regulation proposal, the latest developments about the Common European Data Spaces, and how EHDS will interact with them and the EOSC. As recommended by the Steering Committee, a survey for NRENs and a SWOT analysis have been prepared and will be circulated in 2024.

Period 2

1 SIG-DHD meeting took place in 2024, with 10 attendees.

SIG-DHD actively contributed to the eHealth event organised by RedCLARA at TNC24 in Rennes. 10 people attended the session, “Let’s talk about digital health transformation”, where the results of the general eHealth survey for NRENs 2024 was presented together with specific use cases from RedCLARA and NIH (US). As an outcome of the discussions, the action of extending and deepening the collaboration between GÉANT and RedCLARA in the domain of eHealth has been raised, with collaboration being set to grow on mutual dissemination and sharing of technical practices between the EU and Latin America.

6.7.5 One-Off Workshops

These workshops were very popular within the community and covered a variety of topics:

Period 1

- The 2023 edition of the **Network Performing Arts Production Workshop** (NPAPWS23) was held on 6-8 September 2023, hosted by the University of Memphis, in Tennessee, USA. This event was organised by Internet2 in cooperation with GÉANT.
- A virtual meeting on open-source software and the GÉANT community was held on 9 February, with 95 registered participants. The purpose of the meeting was to identify the gaps in the support of current OSS initiatives and collect community feedback regarding the main OSS problems that the community is facing daily.
- A GÉANT Innovation Programme 2022 virtual showcase event was held on 13 March, with 152 registered participants.
- A two-day, in person workshop was held 30-31 October at the University of Malaga, with 26 registered participants. Coordinators and Steering Committee representatives from each of the 10 TF/SIGs met together with the GÉANT Community Committee (GCC) to reflect on the current Community Programme, share lessons learned, brainstorm ideas, and plan for the next 4-year strategy, 2024-28. Interactive sessions in small groups ensured a highly participatory process. The groups will continue to meet virtually to make their contributions to the new strategy. This workshop proved valuable for all and will be organised annually.

Period 2

- NPAPWS24 was held 11-13 September hosted by the Lithuanian Academy for Music and Theatre in Vilnius, Lithuania [NPAPWS24] with 52 registered participants. The new version of LOLA was presented [[LOLA](#)], including multi-sites and moving from specialised to consumer hardware - including Mac M1 and M2. PSNC presented on possible synergies between cognitive science (<https://www.posemo.io/>) and creative arts, followed by a session on AI and its role in supporting integrated learning, educator training, fostering multi-disciplinary curricula and new pedagogical approaches [[POSEMO](#)]. Other topics

included challenges of art education in Iceland, a Global Jazz Café concept by University of Memphis, in collaboration with HAMU, Prague, and a partnership between the University of Coventry and the Escola Superior d'Art Dramàtic de les Illes Balears (ESADIB).

- The Innovation Programme 2023 Showcase took place virtually on 20 February with 34 registered participants. In the first plenary part, the 10 project leads presented their final project results as lightning talks. This was followed by 3 thematic breakout rooms, facilitated by members of the community, which allowed for longer presentations and discussion.

6.8 Collaborative Activities

6.8.1 Security Days

The Security Days event took place on 9-11 April in Prague with a total of 182 registered participants.

WP3's support of Security Days is a new initiative that is already proving to be an important space for collaboration and knowledge-sharing for cybersecurity experts from the global research and education community [[SECURITY DAYS](#)]. Day one featured two tracks: the SIG-ISM meeting covering cybersecurity legislation, implementation, monitoring, and training and awareness and a second track hosting a Cyber Threat Intelligence (CTI) workshop where NRENs shared their experiences and use cases, followed by a session on developing and deploying security products and services.

Day two of the conference emphasised the increasing importance of security in Research & Education (R&E) globally, with insights on impending legislative changes and technological developments. CESNET highlighted its robust security portfolio and the critical role of their small but effective security team. The keynote by Professor Roland van Rijswijk Deik, from the University of Twente, addressed the urgency of transitioning to post-quantum cryptography, crucial for safeguarding online trust and confidentiality against future quantum computing threats. [[VAN-RIJSWIJK-DEIK](#)]. The Human Factor session stressed the necessity of a human-centric approach in cybersecurity strategy, advocating for a positive organisational culture. Lightning Talks addressed cybersecurity challenges and innovations.

6.8.2 Infoshares

Infoshare management moved from Partner Relations to the GCP in period 2 of GN5-1. This has been a positive development as the CRM dashboard now also tracks infoshare data. Infoshare consistently have high satisfaction rates in the Partner Satisfaction survey and it is clear that many benefit, with a total of 1401 registered participants from 68 different countries.

Table 6.1 shows the infoshares in 2023-2024:

Title	Date	Registered Participants
2024		
Trust and Identity Infoshare for NRENs: Wallets	23 September 2024	86
Infoshare - Enhance Your Development with SonarQube: From Statistics to Solutions	19 September 2024	28
Infoshare on Trusted Research Environments (TREs)	05 September 2024	99

Title	Date	Registered Participants
Infoshare on Co-creation and Collaboration on Above-The-Net / Cloud Services	27 August 2024	28
GÉANT International InfoShare	26 June 2024	26
2nd GÉANT NIS2 Infoshare 2024	24 June 2024	55
EuroHyPerCon Infoshare	29 May 2024	37
WiFiMon InfoShare	21 March 2024	30
1st GÉANT NIS2 Infoshare 2024	18 March 2024	59
Infoshare: OSS Licensing and Licence Compliance Guidelines for Software Developers	12 March 2024	22
GÉANT International InfoShare	29 February 2024	32
FileSender Online Infoshare	29 February 2024	46
Infoshare: PTP operational issues	31 January 2024	107
GÉANT Infoshare - NETDEV Incubator	18 January 2024	20
2023		
GEANT Infoshare - NREN Data Services Data Repositories 101	07 December 2023	53
GÉANT Infoshare - NMaaS Virtual Labs for Education	30 November 2023	86
4th GÉANT NIS2 Infoshare 2023	27 November 2023	68
GEANT Infoshare - NREN Data Services PIDs 101 (Persistent Identifiers)	08 November 2023	41
Software Licences Management in GÉANT 2023 Infoshare	11 October 2023	14
GÉANT International Infoshare	20 June 2023	23
Infoshare - Gitlab Migration Plans	19 June 2023	19
GÉANT Infoshare - Network Platforms Workshop	23 May 2023	42
perfSONAR 5.0 Infoshare	31 March 2023	35
GÉANT Infoshare - NETDEV Incubator	29 March 2023	25
NIS2 directive infoshare follow up event	28 March 2023	67
AfricaConnect4 European NREN infoshare	06 February 2023	20
GLAD FTP23 Infoshare for NRENs	24 January 2023	4

Title	Date	Registered Participants
GÉANT Infoshare - EUDAT: Empowering NRENs and their Institutions with Data Management Capabilities	23 January 2023	45
GÉANT Infoshare - Privacy Policy for the GÉANT Project	18 January 2023	35
GEANT Infoshare on the Security Union	11 January 2023	149

Table 6.1: Infoshares provided during 2023 and 2024.

6.9 Impact

The value of the GÉANT Community Programme continues to be robust. TF/SIGs remain the main channel for knowledge and information sharing but it is also recognised that initiatives like Community Principles are needed to create common understanding and commitment on crucial issues like gender equality. Standing room only at the Birds of a Feather Gender Equality session illustrated the need for the principles and a channel beyond meetings and workshops for the community to convene on.

Creating a space for community at TNC in general was a positive development, with a lot of excitement to bring this spirit back into the event and foster the new generation for community. The GCP Manager is on the Programme Committee for TNC25 and will likely remain a standing member due to the growing importance of the Community Hub as a main feature of TNC. Marcomms data and social media posts are evidence of the Community Hub's impact:

Marcomms Data

LinkedIn stats for GÉANT posts specifically mentioning the Community Hub:

- 6,635 impressions (+355% as compared to 1,458 last year)
- 853 engagements (+1,052% as compared to 74 last year)
- 10.95% Average engagement rate (4.3% last year)

Website:

- The Community Hub page on the TNC24 website totalled 309 views, mostly on the day of the announcement of the new community hub (23 April) and during the event

Connect:

- An article announcing the new community hub was [published on CONNECT](#) (with 40 unique visitors) and added to the CONNECT Newsletter
- Some of the sessions, like the TNC101 were also promoted via the TNC24 podcast <https://connect.geant.org/2024/04/30/plan-your-tnc-and-get-ready-for-rennes>

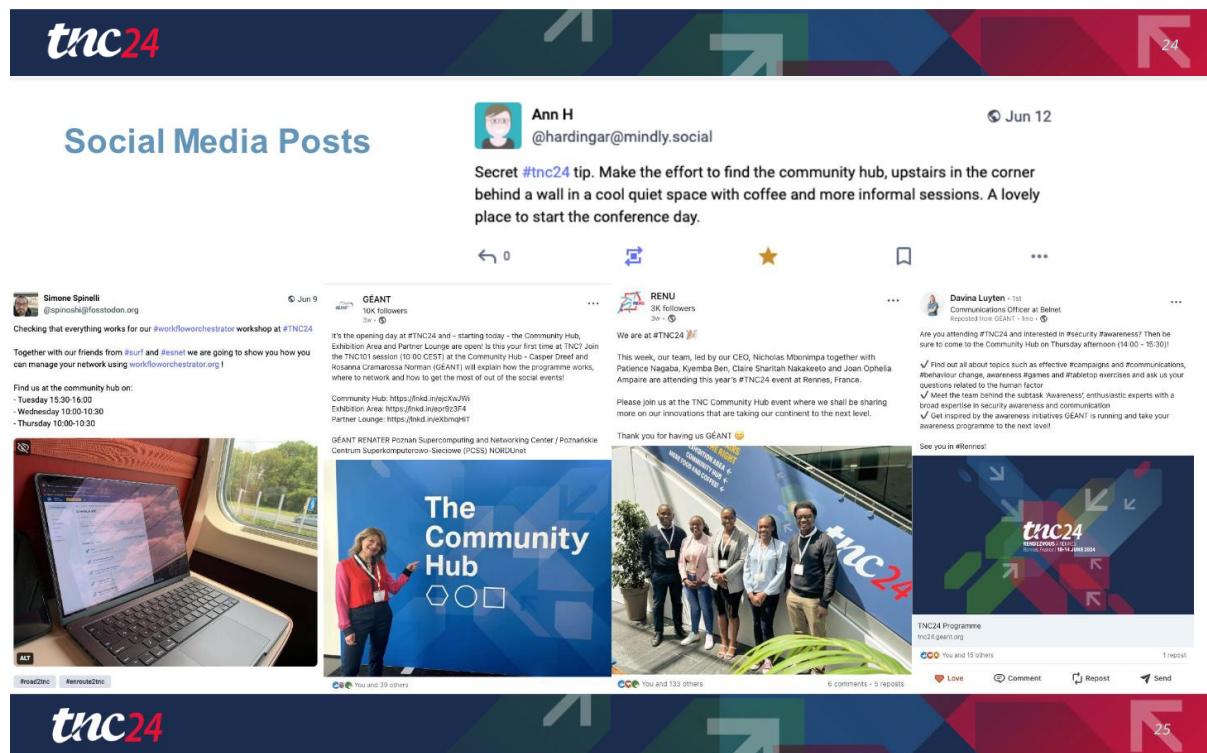


Figure 6.1: Example of data and Marcomms' Community Hub social media posts and Infoshares,

Infoshares, a format that took off during the pandemic, has also proven to remain a reliable way for the community to access information, with several sessions of 100 or more registered participants. Particularly with global conflicts and limited resources or new travel restrictions, virtual meetings will remain crucial for the community and for the GCP to stay accessible.

Responding to the evolving priorities and challenges of the Community and providing the diverse spaces to share, explore, discuss, and work through them is a good example of the impact the GCP strives to make.

6.10Reach

The GÉANT Community Programme enables open participation regardless of the interested participants' country, organisation or role. While in-person attendance is more limiting, hybrid and virtual meetings continue to ensure that a wide audience is reached. GCP participants come from nearly 70 countries and over 200 distinct organisations. It is noteworthy that the highest number of unique participants come from GÉANT itself, so our staff can be considered the most important ambassadors of the value of the programme.

6.10.1 Task Force and Special Interest Group Reach

67 countries are represented in Task Force and Special Interest Group meetings (Table 6.2 below). SIG-Marcomms has the greatest number of countries represented, 49, and SIG-MSP, SIG-NGN, and TF-EDU have 35-38 countries. As the new SIGs develop, there numbers will also increase although some may be considered more Eurocentric. The number of countries is even greater when the mailing lists of each group is considered.

TF/SIG	No. of countries/regions
SIG-ISM	19
SIG-NGN	35
SIG-NOC	26
SIG-TFN	23
SIG-CISS	25
SIG-MSP	38
SIG-Sustainability	8
SIG-Procurement	18
SIG-AI	10
SIG-RED	12
TF-EDU	35
SIG-Marcomms	49

Table 6.2: Number of countries/regions represented in TFs/SIGs

6.10.2 GÉANT Member NREN Reach

The Partner Satisfaction survey results show that GÉANT member NRENs are largely satisfied with the GCP, however, NREN participation of unique individuals continues to be of interest and is consistently monitored. This includes which member NRENs are benefitting from the GCP and which ones have not participated or participated minimally. The team is in constant contact with appropriate Partner Relations and Research Engagement portfolio managers to understand obstacles to participation. Focus on this aspect will continue into GN5-2 to ensure gaps are addressed and that there is an equitable engagement of the community. In all, GÉANT member NRENs and GÉANT staff represent just over 50% of the total number of unique participants in 2023, which means the GCP is serving its primary constituency but also a very broad and diverse global community.

7 GÉANT Innovation Programme

7.1 Concept

As mentioned in Section 5.5, the GÉANT Innovation Programme (GIP) was added to the portfolio of the GÉANT Community Programme in 2021. With annual funding of EUR300k provided by the GÉANT Association, the initiative supports specific research projects carried out by the GÉANT Community, i.e. GÉANT Member NRENs, universities, research institutions or other such legal entities to which a GÉANT Association Member NREN provides services.

The GIP is a unique opportunity to enable initial development, establish a proof of concept or testing of new ideas, with lightweight administrative constraints. The programme offers researchers flexibility to focus on any subject area or topic providing that it falls within GÉANT's community remit. Proposals can, for example, draw from networking, cloud, security, trust and identity, and education, but the primary focus and impact must benefit the GÉANT European research and education community. The programme particularly encourages ambitious and novel research proposals addressing new concepts and techniques and those with the potential for significant scientific or societal and economic impact. Funding decisions are based on a number of criteria, including: quality, innovation, potential impact and value for money.

Similar to the TF/SIGs, the time and effort needed for the co-ordination of the GÉANT Innovation Programme is funded through the project, although the funding itself is provided by the GÉANT Association annual budget rather than the EC. In this way the skills and experience of the team are leveraged to stimulate innovation in an unrestricted way. The results are shared in a virtual showcase, although GÉANT community participation has dropped in the last period.

The call for proposals was for research project funding of up to EUR30k for each project in 2023, and increased to EUR50k in 2024, for a maximum duration of 6 months.

7.2 Challenges and Improvements

The Innovation Programme for 2023 continued as in previous years with a maximum of Eur30k per project, funding 10 projects in total. However, the GCC agreed to increase this amount to Eur50k for Innovation Programme 2024 to test if it would incentivise more applications. An informal evaluation of the Innovation Programme to date (3 rounds, 2021-2023) was also conducted and the top challenges identified were:

- Weak links of project results to the GÉANT community and GN5 project
- High volume of out-of-scope applications
- High volume of applications and awardees from Italy
- Low representation of women
- Low application numbers (1 in 3 awarded)
- Poor coordination with internal units, especially finance
- Decreased participation in online Showcase of results

In addition to increasing the maximum funding amount, additional steps were taken to mitigate the following challenges.

- Sessions held at GN5-1 Project Symposium and TNC24 to create awareness, engage discussion, and collect input on how to improve the Innovation Programme

- Consultations with SIG-Marcomms conducted to strategise on more effective promotion channels and creating more NREN ownership
- Increased promotion via Partner Relations, GCC, GN5 channels
- GÉANT topic areas outlined in guidelines to applicants
- Specific call out for women and individuals for underrepresented groups to apply
- TNC participation criteria added to ensure projects featured at TNC
- Mentors designated from SME reviewers pool (no longer GCC members) to improve link to community and GN5 activities
- Showcase discontinued in favour of project results presented at relevant TF/SIG meetings
- Consultations with Finance to improve the financial review and invoicing process
- Improvements in the overall standard operating procedure, including streamlining documentation and
- New “Challenge” approach considered, to crowdsource specific challenges from the community and formulate the Calls for proposal around these- currently under review of the Board.

The Innovation Programme session was selected as a single presentation at TNC24:



Figure 7.1: Innovation Programme presentation

The 2024 Innovation Programme already benefitted from the improvements, with a record 66 applications received from 20 countries. 4 of the 6 projects awarded were submitted by women. See Figure 7.2 below for trends to date and countries submitted.

Innovation Programme Trends to Date

- Total number per year

	2024	2023	2022	2021
Submitted	66	36	42	26
Approve(d)	6	10	10	10

- Thematic areas

	2024
Above the net	6
Cloud	8
Network	19
Security	8
T&I	6
Education	7
eHealth	2
multimedia	1
other	9

	2023		2022		2021	
	approved	submitted	approved	submitted	approved	submitted
networks, cloud	4	14	6	20	3	9
multimedia	0	2	1	5	2	3
T&I, education	2	7	1	13	2	10
security	2	7	1	2	3	4
health	2	6	1	2	0	0

Innovation Programme Applications by Country

Country	2024	2023
Albania	3	1
Belgium	1	
Croatia	3	
France	2	
Georgia	1	
Germany	2	
Greece	2	2
Ireland	6	5
Italy	22	20
Moldova	1	
Netherlands	2	

N. Macedonia	3	
Norway		1
Poland	5	1
Portugal	2	1
Serbia	1	1
Spain	3	1
Sweden	1	1
Ukraine	1	
United Kingdom	5	2
TOTAL	66	36

Figure 7.2: Innovation programme applications

Figure 7.3, below, shows the update website content for Applicant Guidelines on the website [[GUIDELINES](#)].

Who can apply

GÉANT Member NRENs and/or legal entities from one of its 'connected institutions', including universities, research or education institutes or institutions connected to an NREN, are welcome and eligible for funding under this programme. Joint applications of a small consortia led by an NREN or eligible entity are also welcome to apply.

GÉANT values equal opportunity, being fair and inclusive, and supporting a community where everyone feels welcome. We are therefore committed to increasing the number of women and individuals from underrepresented groups in the Research and Education Networking sector. We strongly encourage women and individuals from underrepresented groups to apply for the Innovation Programme.

Which research topics will you consider?

Topics from areas where the GÉANT community is currently most active include: Network and Network Technologies; Above the Net services; Trust and Identity; Security, and Digital Health. Other areas the community are engaged in are also strongly welcome.

We particularly encourage innovative proposals that demonstrate significant scientific or societal and economic impact, and create benefit for the GÉANT European Research and Education community. Examples of previous innovation developed within the GÉANT community include widely adopted services, such as [eduroam](#), [eduVPN](#) and [eduMEET](#).

GÉANT's Thematic Areas:

Network and Network Technologies

Focused on network infrastructure, services, and management - including such areas as routing and switching, multi-domain service provisioning, automation and orchestration, monitoring and measurement, AI, time and frequency transfer, quantum networking and secure networks.

Above the Net

Digital services for the end-user, including educational services, commercial and community cloud services, and open-source videoconferencing solutions.

Trust and Identity

Secure, agile, and scalable services for scientific, academic, and commercial user communities, providing trusted access to digital infrastructure and online collaboration resources.

Security

Leading-edge tools, solutions, and support to keep networks, services, connections, and users safe and secure in an environment of increasing levels of cyber security threats. The Innovation Programme facilitates the opportunity to test new ideas and make a real difference in advancing not only technology, but also business practices, human capital, and sustainability for, and by, the GÉANT community.

The Innovation Programme facilitates the opportunity to test new ideas and make a real difference in advancing not only technology, but also business practices, human capital, and sustainability for, and by, the GÉANT community.

Our funding decisions are based on a number of criteria, including quality, innovation, potential impact, and value for money.

Figure 7.3: Innovation Programme Applicant Guidelines

The programme continues to be supported logistically by the WP3 Task 4 team and members of the GCC, but funding (EUR300k) is provided by the GÉANT community, from the GÉANT Association budget. It also continues to be strongly promoted by the Marcomms team through CONNECT Online articles (see **Error! Reference source not found.**) and via social media.

7.3 Results

7.3.1 2023 Results

In 2023 a total of 36 submissions from 15 different countries were received Table 7.1.

Country	Biology	Blockchain	Cloud	Computer technology	education	eHealth	multimedia	Networking	Security	Sustainability	trust & identity	Grand Total
Albania									1			1
Greece					1	1						2
Ireland			1					2	2			5
Italy	1	1	2		3	2	1	5	4	1		20
Norway											1	1
Poland							1					1
Portugal				1								1
Serbia						1						1
Spain											1	1
Sweden								1				1
United Kingdom								2				2
Grand Total	1	1	3	1	4	4	2	10	7	1	2	36

Table 7.1: Summary of GÉANT Innovation Programme 2023 submissions

In total, 10 projects received funding in 2023, for a total of EUR292,000, or 97.3% of the budgeted EUR300,000. A list of the projects, showing the organisation and grant, is given in [Error! Reference source not found..](#)

Project Title	Organisation
Digital Children Kidney Twin	University of Kragujevac, Serbia
EDUCATION NEVER DIES - Dissection room audio-video system innovation	IRCCS MultiMedica - MultiMedica SpA, Italy
Fair-RL-CC: Towards Fair Congestion Control with Reinforcement Learning	University of Sussex, UK
SecMC: Secure Data Management for Multi-Cloud Environments	University of Galway, Ireland
Graph Based Intrusion Detection System	Università Politecnica delle Marche, Italy
DP4N: Differential Privacy for Networks	University of Trieste, Italy
SUNET Network Controller	SUNET
IoT Device Identification at the Edge	University of Cambridge, UK
International login in TSD (Services for Sensitive Data) and Educloud	University of Oslo, Norway
CAMEL - Comparative Analysis of Metrics for an Enhanced Level of Blockchain KPI	Università degli studi di Cagliari, Italy

Table 7.2: GÉANT Innovation Programme 2023 – funded projects

All projects finished with their expected outcomes and were showcased in a virtual event on 20 February 2024 [[GIP23 Showcase](#)].

Further details of the 2023-funded projects are available on the GIP website at [[GIP FP](#)].

7.3.2 2024 Results

In the 2024 GÉANT Innovation Programme, a total of 66 submissions from 20 different countries were received, as summarised in [Error! Reference source not found.](#)

In total, 6 projects received funding in 2024, for a total of EUR273,635, or 91.2% of the budgeted EUR300,000. A list of the projects, showing the organisation and grant, is given in Table 7.3

Due to the addition of the TNC requirement in the project budgets, administration has been adjusted to allow for two invoices, one for the main project expenses in Dec 2024, and a second for TNC expenses in Jul 2025. Mentors are responsible for reviewing the final project reports.

All projects expect to finish with their anticipated outcomes in December 2024, and it is planned to showcase their results at relevant TF/SIG meetings in Q1-2 2025 in addition to TNC25.

Project Title	Organisation
Business Platform for OpenStack Clouds	GRENA, Georgia
Effective Multi-Laser-Beam Transmission for Satellite-Airborne Backhaul Networks	University of Bradford, UK
Explainable AI for DNS Security in Privacy-aware NREN Federations - FedXAI4DNS	ICCS, Greece
ZoomIn4PinkHats	CARNET, Croatia
Mobile App Network trAffic Nutrition fActS (MANANA)	Università degli Studi di Napoli Federico II, Italy
Design User Experiences for Digital Identities	University of Malaga, Spain

Table 7.3: GÉANT Innovation Programme 2024 – funded projects

Further details of the 2024 funded projects are available on the GIP website at [[GIP FP](#)].

7.3.3 Impact

With over 1 million Euros invested by the end of 2024, it was time to reflect on the real impact of the GÉANT Innovation Programme on the community. The concept of “blue sky innovation” may have its risk in failing to address concrete challenges of the REN sector, and living up to the mission of Innovation for and by the Community. The impact of the Innovation Programme in 2023 can be considered extremely low- its lack of geographic representation, gender equality, direct link to NREN challenges, and integration into the community by the GCC mentors were all factors. However, 2024 can be seen as more optimistic and it is hoped that the impact will be greater, especially as two projects stemmed from NRENs directly, and the mentors have more charge to connect them to the GÉANT community. Participation at TNC25 should also have great impact on both the project participants who attend and get exposure to the REN sector, and in turn, TNC participants who were otherwise unaware of Innovation Programme projects. Creating opportunities for dialogue and networking are main goals of the GCP and the Innovation Programme continues to be a key channel to facilitate this, especially in connecting NRENs to the broader research and education community that they serve. It is hope that in GN5-2, further improvements and greater impact will be reported on the Innovation Programme.

8 GÉANT Community Award

8.1 Concept

GÉANT honours community members who have made outstanding contributions to collaborative work and the development of services and technologies and who have shared their ideas, expertise and time with the community. It is recognised that such contributions are often provided voluntarily and through the good will of employer organisations.

Presented for the first time in 2012, the Community Award is sponsored by the GÉANT project. This sponsorship provides administrative support, allowing the award to be open to nominations from across the community, and facilitates the selection of winners by a panel of judges. The Community Award is a sign of recognition for the individual efforts that make up our community collaborations. It is presented every year at TNC, the GÉANT community's flagship conference.

The GÉANT Community Programme took over the management of the GÉANT Community Award for TNC22 and created a new approach that allowed the research and education community to publicly nominate and vote for candidates via a devoted website. Nomination criteria and award categories were outlined on the website and participants used an online form for submitting nominations [[GCA](#)]. An Award Committee, consisting of the GCC Chair, the CEO of GÉANT, the Chair of that years TNC Programme Committee, the Chair of the GÉANT Board, and the CEO of the TNC hosting NREN, created a shortlist of nominees. The nominees were then posted on the website and the community had a 3-4-week period to cast their votes. The Committee made a final decision, which is announced at during the TNC opening plenary. The GCP ensures coordination with the Vietsch Foundations Medal of Honor, which is also awarded at TNC, although there is strict criteria that it cannot be awarded to a GÉANT staff member.

8.2 Challenges and Improvements

While the first round of public nomination and voting was robust, including 689 votes, subsequent years have seen a drop with 454 votes in 2023 and 421 in 2024. To address the declining engagement and informal process of the Award Committee, the approach of the Community Award has been reconsidered, some of which was implemented in TNC24 and others will be planned for TNC 25. The challenges and improvements include:

- Challenge: Nominees only acknowledged on the website during the voting process and then documented after TNC.
Improvement: Now the nominees are featured in a short video before the final winner is announced at TNC- this provides more visibility and acknowledgement of the nominees. Being nominated can already be considered an honour. This was done at TNC24 and positive feedback was informally received from audience members.
- Challenge: Public nominations and voting results do not always add up to the shortlisted nominees and final winner due to the Award Committee's informal selection process.
Improvement: Beginning in TNC25, there will only be public nominations and there will no longer be public voting. The Award Committee will then be free to make a selection based on their own criteria.
- Challenge: The Award Committee operates without a Terms of Reference and only have the guidelines as stated on the CA website.

Improvement: A ToR will be developed to provide basic guidelines for the Committee to follow when creating the shortlisted nominees and making a final decision. As the committee members change annually based on the hosting NREN, and any other potential leadership changes, this will make it clearer for the new members to take responsibility of their committee duties. It will also provide accountability to the community on the process.

8.3 Results

The number of nomination submissions received was much higher in 2024 although in both years, the same number of individuals were nominated Table 8.1.

2023	2024
13 received for 13 individuals	32 received for 12 individuals

Table 8.1: Number of GÉANT Community Award nomination submissions received 2023–2024

The GÉANT Community Award Committee selected 5 shortlisted nominees in both 2023 and 2024 but one declined in 2024 so only 4 nominees were publicly listed for the voting. The shortlisted nominees were displayed on the website and will remain displayed as shortlisted nominees [GCA_SN].

There were 454 votes in 2023 and 421 in 2024. As noted, the Award Committee did not select the nominee with the highest number of votes but rather used its own criteria.

The 2023 Awardees were Sebastiano Buscaglione (GÉANT) and Sabine Jaume-Rajaonia. Sebastiano is Senior Network Engineer at GÉANT. He has made an impressive contribution in planning and designing the next evolution of the GÉANT pan-European network. His technical acumen and his ability to relay complex issues are paired with his ability to engage successfully with all stakeholders (GÉANT, NRENs, European Commission reporting, as well as a wide breadth of providers in the Telco and network technology marketplace).

Sabine is the former International and Strategy Director at RENATER. For over 28 years, Sabine has been one of the most valuable members of both the European and international community. She had a key role in setting up the French NREN, RENATER, and advocated for GÉANT and European NREN collaboration as we know it now. Over the years, she has been a member of several Boards and Committees (GÉANT Board, GÉANT Community Committee, GÉANT Community Programme and the Programme Committee of TNC20 and TNC21. A strong advocate for NRENs around the world, she was not only involved in the BELLA and AfricaConnect projects, but she kickstarted and led many initiatives for NRENs in Africa. [\[GCA_2023\]](#)

The 2024 Awardee was Marina Adomeit (SUNET). Marina is SUNET's Trust and Identity Manager and has been working with the NREN community since 2006. She co-leads the Trust and Identity work package in GN5-1 (WP5) and has worked on global projects such as Seamless Access Consortium, and Puhuri AAI infrastructure for access to EuroHPC LUMI supercomputer, among others. [\[GCA_2024\]](#)

Feedback from the award recipients indicated their appreciation of the broader recognition by their peers. Sebastiano Buscaglione (GÉANT) commented:

"It is a great honour for me to receive this award, and I want to use this occasion to thank this community for the amazing trust and support I received throughout the years. It is an incredible privilege for me to be able to do the work I do as I truly believe that what we do is important. I look forward to getting involved with many interesting projects and people in the future. There is no better place to be!"

Sabine Jaume commented:

"This award is an utmost honour. I am very grateful to those I am working with for 28 years and who made it happen! It also very nicely bootstraps a new chapter of my career. Our GÉANT Community is made of amazing people continually engaging with all stakeholders: users, NRENs and RRENs, funding bodies, policy makers, industry, etc. Because no matter the frontiers, Research and Education deserve top class networks, security and digital services. I am so proud to be part of this Community. Let's keep on innovating together for a bright future!"

Marina Adomeit (SUNET) commented:

"Enthusiasm, growth, challenge, fun, and friendship are what comes to mind when I think about working in the GÉANT community. It is an absolute honour to be part of this forward-looking family that aspires towards a bright and modern future for global Research and Education. I am beyond thankful for the mentorship, comradeship, and trust I received from my peers, and this award recognises that these are at the root of our community! The future of digital identity is happening now! It is exciting and full of amazing opportunities that we can shape and realise together to empower the new generations in academia."

This is further supported by follow-up interviews conducted with the winners [[GCA 2023](#)] [[GCA 2024](#)]

8.4 Impact

The Community Award continues to be a cherished recognition by the GÉANT Community and it is important to be accountable in the selection process. The impact of an opaque process has caused some doubts by some and jeopardises the value of the award. By implementing improvements whereby the community can continue to engage by publicly nominating their colleagues and establishing a ToR for the Award Committee, it is hoped that confidence in the process can be restored for everyone. The effect of recognising nominees on stage at TNC is also noted as a positive development.

9 Communicating the Impact of the GÉANT Community Programme

9.1 Concept

The GÉANT Community Programme is a grassroots voluntary activity where topics and issues raised by community experts are discussed and addressed. Those activities are conducted by a niche group of our community and raising awareness about the programme is essential to enhance the broader engagement with the groups as well as support cross-sector involvement. Both the Task Force and Special Interest Group coordinators and GÉANT's marketing and communication team support those efforts via various channels of communication.

9.2 Implementation

Communications activities for the GÉANT Community Programme continued and were reinforced by training for TF/SIG Coordinators by GÉANT Marcomms at the 2-day workshop on 2-3 November 2023 in Malaga.

Task Forces and Special Interest Group Coordinator responsibilities:

- Promote the group activities via the group mailing list.
- Write a blog post on upcoming group activities to promote registration.
- Write a blog post on the discussions and outcomes of the group activities.
- Promote the purpose of the group among the broader research and education community at other events and conferences.
- Promote cross-sector activities where relevant among their respective groups.

Marketing and Communications responsibilities:

- Promote the group activities via
 - blog posts and articles
 - social media promotions
- Promote all other GCP activities including Innovation Programme, Community Hub, Community Award, Infoshares via
 - blog posts and articles
 - social media promotions

The GÉANT Marcomms team also support all website maintenance and improvements. The GCP website continues to be the main source of information with TF/SIGs maintaining their respective wiki pages. The website was revised during GN5-1 to reflect the changing TF/SIGs on the thematic areas page [[THEMATIC](#)]. Dedicated webpages have for the Innovation Programme [[GIP](#)] and the Community Award [[GCA](#)] have also been regularly updated to present new timelines, and revised content. A new GCP logo and branding will be developed and launched in GN5-2. The website content will also be refreshed based on the new strategy and GCC ToR.

9.3 Results

During the period from January 2023 to October 2024, the following GCP promotions and communications materials have been produced:

- Revised and updated community website [GC_website].
- 6 dedicated blog posts in CONNECT on the 2023-2024 GÉANT Community Award, including interviews with the winners.
- 4 dedicated blog posts in CONNECT on the GÉANT Innovation Programme.
- Dedicated interview with TF-EDU's Steering Committee member Evelien Renders in CONNECT magazine [[CONNECT47](#)]
- In total, 89 posts in CONNECT tagged “Community Programme” since 1 Jan 2023. This includes interviews, event posts, infoshares, past Community Awards, and various other articles.

An overview of all blog posts from 2023 to 2024 is provided in [Error! Reference source not found..](#)

In total, 131 posts on LinkedIn, GÉANT's primary social media platform, about TF/SIGs, Community Programme, Community Hub, Community Award, Innovation Programme, Infoshares, NPAPW, which resulted in:

- 72,419 Impressions
- 5860 Engagements
- 5.9% Average engagement rate.

10 Conclusions

The GÉANT Community Programme has experienced numerous improvements, developments, and learnings during the GN5-1 project. This has been a period of reflection and evaluation and also experimentation. The Community Programme continues to adapt and evolve its approach to best support the R&E community in sharing information, leveraging knowledge and stimulating innovation.

The Community Programme remains unique in serving not just European based NRENs and institutions, but regional and global ones as well. This diversity allows for broad cross-fertilisation and exchange of ideas and experiences. It also comes with the consequences of some countries or organisations represented more heavily, leading to gaps in the community. These have been seriously considered during GN5-1 and steps are being taken to mitigate it- from active consultation with community representatives, the Community Hub at TNC, which attracted new audiences, to launching the Community Principles, a platform that engages all organisations on issues the community prioritises, regardless of location.

The results of the first four years of the GÉANT Innovation Programme were evaluated, which led to a number of changes. The most significant was an increase of the award to EUR50k per project. During GN5-1, the programme received the highest number of applications to date, diverse country representation, and much improved gender equality, with 4 out of 6 projects awarded to women. Linking directly to members of the community by ensuring mentors are well positioned to facilitate these connections was also a positive development. However, continuous improvements are still needed, and this will remain a focus in GN5-2.

Foundational work on collecting reflections and input on the GCP Strategy and the GCC's ToR, with consultations from key GCP representatives, the GÉANT Exec, and the GCC has also informed a new direction. The GCP clearly needs a serious refresh that reflects what the community prioritises, and not what is simply on paper, or the tradition of how things were done.

Overall, the sheer volume of meetings, workshops, trainings and engagement both in person and online facilitated by the GÉANT Community Programme means it continues to reach a wide audience. It also stays committed to evolving in step with the community's own expansion, to ensure both utmost relevancy and impact.

Appendix A How the Thematic Areas Are Supported

This appendix lists the Task Forces, Special Interest Groups, workshops and training, collaborative activities, groups or communities, and collaborative services by which each thematic area is supported, as at the end of GN5-1.

Thematic Area	Task Force	Special Interest Group	Workshop and Training	Collaborative Activity / Group / Community	Collaborative Service
Security		SIG on Information Security Management (SIG-ISM) – Developing security expertise and excellence within the NREN community [SIG-ISM]	TRANSITS	Security Days	
Trust & Identity				Research and Education Federations (REFEDS) – Group that aims to represent the mutual needs of research and education identity federations worldwide in the ever-growing space of access and identity management	

Thematic Area	Task Force	Special Interest Group	Workshop and Training	Collaborative Activity / Group / Community	Collaborative Service
Network		<p>SIG on Next-Generation Networks (SIG-NGN) — Knowledge exchange and collaboration on developments in networking technologies [SIG-NGN]</p> <p>SIG on Network Operations Centres (SIG-NOC) – Sharing and creating common best practices for the organisation and management of Network Operations Centres [SIG-NOC]</p> <p>SIG on Time and Frequency Network (SIG-TFN) - gather and exchange experiences, ideas and knowledge on the development, deployment, testing and standardisation of Time and Frequency solutions (SIG-TFN) [SIG-TFN]</p>			

Thematic Area	Task Force	Special Interest Group	Workshop and Training	Collaborative Activity / Group / Community	Collaborative Service
Cloud		SIG on Cloud Interoperable Software Stacks (SIG-CISS) – Sharing and collaborating on cloud infrastructure software stacks, platforms and research workflows [SIG-CISS]		Open Cloud Mesh (OCM) – A joint international initiative under the umbrella of the GÉANT Association that is built on the open Federated Cloud Sharing application programming interface (API) taking Universal File Access beyond the borders of individual clouds and into a globally interconnected mesh of research clouds without sacrificing any of the advantages in privacy, control and security an on-premises cloud provides [OCM]	
Stakeholder Engagement	TF on Educational Services and Activities (TF-EDU) – Addressing common issues NRENs and education-focused organisations are dealing with regarding their educational services and activities [TF-EDU]	SIG on Marketing Communications (SIG-Marcomms) – Sharing and collaborating on marketing, communications and public relations [SIG-Marcomms] SIG on Research Engagement Development (SIG-RED) – Developing frameworks, methods and best practices for participating NREN/research organisations to better		Network on Performing Arts Production Workshop (NPAPW) - annual workshop series hosted in a rotating city of Europe and the U.S. It is a single-track workshop in which attendees learn about technologies utilising advanced networks to enable arts instruction and performance, experience master classes and live performances leveraging these technologies, share	

Thematic Area	Task Force	Special Interest Group	Workshop and Training	Collaborative Activity / Group / Community	Collaborative Service
		<p>collaborate together when engaging with national and international research communities, so as to grow an NREN's business as well as gain an understanding of the needs and trends of research communities more broadly [TF-RED]</p> <p>SIG on Digital Health Data (SIG-DHD) - Exploits synergies among the NRENs and assesses the possibility of joint efforts on the items identified by the GÉANT community as most relevant for eHealth [SIG-DHD]</p>	<p>research exploring efficacy of these technologies (NPAPW) https://npapws.org/</p>		
Business Practices		<p>SIG on Management of Service Portfolios (SIG-MSP) – Supporting management across the product lifecycle and sharing service ideas [SIG-MSP]</p> <p>SIG on Sustainability (SIG-Sustainability) - Shares information around each member's sustainability ambitions [SIG-Sustainability]</p>			

Thematic Area	Task Force	Special Interest Group	Workshop and Training	Collaborative Activity / Group / Community	Collaborative Service
		<p>SIG on Procurement (SIG-Procurement) - Facilitates a coordinated approach to improve R&E procurement [SIG-Procurement]</p> <p>SIG on Artificial Intelligence (SIG-AI) - Delves into how AI can enhance cybersecurity, above-the-net services, network management, and network services [SIG-AI]</p>			

Table A.1: Activities by which thematic areas are supported as at the end of GN5-1

Appendix B Overview of GCP Blog Posts 2023–2024

Topic Area	Activity	Date	Link
2024			
Stakeholder engagement	TF-EDU	21/10/24	https://connect.geant.org/wp-content/uploads/2024/10/GEANT-CONNECT-47.pdf
Stakeholder engagement	SIG-RED	18/10/24	https://connect.geant.org/2024/10/18/join-the-sig-red-visit-to-nikhef-in-amsterdam-on-19-november-2024
Stakeholder engagement	SIG-Marcomms	17/10/24	https://connect.geant.org/2024/10/17/building-connections-and-empowering-communicators-insights-from-sig-marcomms-autumn-meeting-2024
Business practices	SIG-AI	15/10/24	https://connect.geant.org/2024/10/15/join-the-first-sig-ai-meeting-in-poland-on-11-december-2024
Gender equality	Gender Equality	11/10/24	https://connect.geant.org/2024/10/11/infoshare-gender-equality-within-the-geant-community-27-november-2024
Business Practices	SIG-Procurement	11/10/24	https://connect.geant.org/2024/10/11/big-tech-collaboration-register-for-the-next-sig-procurement-online-meeting-on-4-november
Network	SIG-NGN & SIG-TFN	10/10/24	https://connect.geant.org/2024/10/10/building-communities-for-committed-network-evolution-activities-joint-sig-ngn-sig-tfn-meeting-in-norway
Stakeholder engagement	TF-EDU	23/9/24	https://connect.geant.org/2024/09/23/european-nrens-and-their-learning-impact-tf-edu-to-meet-in-barcelona-on-9-october-2024
Infoshares	Infoshare NREN QKD Networks	23/09/24	https://connect.geant.org/2024/09/23/infoshare-nren-qkd-networks-25-september-2024
NPAPW	NPAPW24 overview	18/9/24	https://connect.geant.org/2024/09/18/npapw24-overview-empowering-global-arts-collaboration-through-advanced-networking-technologies
Network	SIG-NOC	17/9/24	https://connect.geant.org/wp-admin/post.php?post=22375&action=edit
Security	SIG-ISM	13/9/24	https://connect.geant.org/2024/09/13/register-for-sig-ism-autumn-meeting-8-9-october-2024
Infoshares	Infoshare T&I	4/9/24	https://connect.geant.org/2024/09/04/trust-and-identity-infoshare-wallets-23rd-september-1400-cest
Infoshares	Webinar trusted research environments	20/8/24	https://connect.geant.org/2024/08/20/webinar-trusted-research-environments-5-september-1400-1530-cest

Topic Area	Activity	Date	Link
Gender equality	Gender equality principles	14/8/24	https://connect.geant.org/2024/08/14/geant-community-gender-equality-principles-launch
Business practices	SIG-Procurement	24/7/24	https://connect.geant.org/2024/07/24/first-virtual-meeting-for-sig-procurement-discussed-challenges-and-collaboration-opportunities
Business practices	SIG-MSP	23/7/24	https://connect.geant.org/2024/07/23/sig-msp-autumn-meeting-on-24-october-in-poznan-poland
Network	SIG-NGN/SIG-TFN	23/7/24	https://connect.geant.org/2024/07/23/upcoming-sig-ngn-sig-tfn-meeting-at-nordunet
Stakeholder engagement	SIG-RED	12/7/24	https://connect.geant.org/2024/07/12/not-the-usual-suspects-new-sig-on-research-engagement-development-meets-at-tnc24
Infoshares	QKD Infoshare	10/7/24	https://connect.geant.org/2024/07/10/join-the-upcoming-infoshare-qkd-long-distance-trials-17-07-2024-1400-cest
Network	SIG-TFN	9/7/24	https://connect.geant.org/2024/07/09/sig-tfn-to-meet-in-amsterdam-on-16-17-october
Business practices	SIG-Procurement	3/7/24	https://connect.geant.org/2024/07/03/new-sig-procurement-group-to-meet-9-july-2024
NPAPW	NPAPW24	2/7/24	https://connect.geant.org/2024/07/02/npapw24-programme-is-now-live
Stakeholder engagement	SIG-Marcomms	19/6/24	https://connect.geant.org/2024/06/19/sig-marcomms-at-tnc24-the-power-of-ai-in-marketing-and-communications
GÉANT Community Award	Community Award	11/6/24	https://connect.geant.org/2024/06/11/meet-your-2024-geant-community-award-winner
Cloud	SIG-CISS	3/6/24	https://connect.geant.org/2024/06/03/cloud-side-events-at-tnc24-geant-cloud-horizons-frameworks-and-sensitive-data-sig-ciiss
GÉANT Community Programme	New SIGs at TNC24	29/5/24	https://connect.geant.org/2024/05/29/meet-the-new-special-interest-groups-at-tnc
Innovation Programme	Innovation Programme	28/5/24	https://connect.geant.org/2024/05/28/awarded-projects-of-the-2024-geant-innovation-programme
Network	SIG-NOC	22/5/24	https://connect.geant.org/2024/05/22/sig-noc-release-2023-noc-survey-results
Stakeholder engagement	SIG-RED	21/5/24	https://connect.geant.org/2024/05/21/join-the-research-engagement-development-activities-at-tnc24

Topic Area	Activity	Date	Link
Network	SIG-TFN	13/5/24	https://connect.geant.org/2024/05/13/sig-tfn-time-frequency-network
Network	SIG-NOC	13/5/24	https://connect.geant.org/2024/05/13/20th-sig-noc-meeting-in-helsinki-sensing-at-the-fingertips-how-do-you-detect-anomalies
Network	SIG-NOC	24/4/24	https://connect.geant.org/2024/04/24/registrations-for-the-20th-sig-noc-meeting-close-friday-29-april
NPAPW	NPAPW24	10/4/24	https://connect.geant.org/2024/04/10/network-performing-arts-production-workshop-2024-npapw24-call-for-proposals
Infoshares	Infoshare Software catalogue	9/4/24	https://connect.geant.org/2024/04/09/infoshare-software-catalogue-towards-full-compliance-for-your-project-in-geant-22-april-2024
GÉANT Community Programme	GCC	26/3/24	https://connect.geant.org/2024/03/26/claudio-allocchio-to-continue-to-lead-geant-community-committee
Business practices	SIG-MSP	26/3/24	https://connect.geant.org/2024/03/26/diving-into-the-risks-and-challenges-for-nrens-sig-msp-meets-in-copenhagen
Stakeholder engagement	SIG-Marcomms	12/3/24	https://connect.geant.org/2024/03/12/giving-voice-to-the-ren-community-sig-marcomms-meets-in-ljubljana
GÉANT Community Award	Community Award	11/3/24	https://connect.geant.org/2024/03/11/vote-now-for-the-2024-geant-community-award
Network	SIG-NGN	22/2/24	https://connect.geant.org/2024/02/22/sig-ngn-to-meet-in-catania-8-9-april-2024
GÉANT Community Award	Community Award	14/2/24	https://connect.geant.org/2024/02/14/2024-geant-community-award-nominations-close-16-february
GCP	NREN Principles	8/2/24	https://connect.geant.org/2024/02/08/nren-principles-for-the-geant-community
Business practices	SIG-MSP	30/1/24	https://connect.geant.org/2024/01/30/sig-msp-spring-meeting-on-13-march-2024-in-copenhagen
Stakeholder engagement	SIG-Marcomms	25/1/24	https://connect.geant.org/2024/01/25/podcasts-service-marketing-community-sig-marcomms-in-ljubljana-5-6-march-2024
Infoshares	Infoshare: Precision Time Protocol	17/1/24	https://connect.geant.org/2024/01/17/infoshare-precision-time-protocol-ptp-operational-issues-31-january-2024
Cloud	SIG-CIIS	16/1/24	https://connect.geant.org/2024/01/16/sig-ciis-to-meet-on-13-march-at-cern-register-now

Topic Area	Activity	Date	Link
Innovation Programme	Innovation Programme	11/1/24	https://connect.geant.org/2024/01/11/register-now-for-the-2023-geant-innovation-programme-showcase-20-feb-2024
GÉANT Community Award	Community Award	10/1/24	https://connect.geant.org/2024/01/10/who-will-you-nominate-for-the-2024-geant-community-award-submit-now
Gender Equality	Gender Equality	2/1/24	https://connect.geant.org/2024/01/02/gender-equality-unplugged
<u>2023</u>			
Innovation Programme	Innovation Programme	19/12/23	https://connect.geant.org/2023/12/19/the-2024-geant-innovation-programme-call-for-proposals-now-open
Network	SIG-NOC	29/11/23	https://connect.geant.org/2023/11/29/networks-and-data-centres-time-to-talk-about-energy-efficiency
Infoshares	Infoshare: RARE for DDoS Attack Protection	29/11/23	https://connect.geant.org/2023/11/29/infoshare-relying-on-rare-for-ddos-attack-protection
Network	SIG-NGN	27/11/23	https://connect.geant.org/2023/11/27/sig-ngn-to-meet-virtually-register-now-december-7-2023
Stakeholder engagement	SIG-Marcomms	20/11/23	https://connect.geant.org/2023/11/20/sig-marcomms-in-ljubljana-march-5-6-call-for-presentations
Network	SIG-NOC	26/10/23	https://connect.geant.org/2023/10/26/finding-nemo-sig-noc-to-meet-in-dublin-november-14-15-2023
Cloud	SIG-CISS	26/10/23	https://connect.geant.org/2023/10/26/12th-sig-ciss-meeting-held-in-zurich-november-13-register-now
Network	SIG-NGN	25/10/23	https://connect.geant.org/2023/10/25/sig-ngn-meet-virtually-october-26-2023
Business practices	SIG-MSP	24/10/23	https://connect.geant.org/2023/10/24/exploring-the-future-of-european-nren-services-insights-from-athens
Stakeholder engagement	SIG-Marcomms	9/10/23	https://connect.geant.org/2023/10/09/what-does-it-take-to-communicate-the-impact-of-a-project-sig-marcomms-discussed-online
Stakeholder engagement	SIG-Marcomms	27/9/23	https://connect.geant.org/2023/09/27/sig-marcomms-autumn-meeting-goes-fully-virtual-5-october-2023
Business practices	SIG-MSP	20/9/23	https://connect.geant.org/2023/09/20/sig-msp-the-next-big-thing-10-11-october-2023-athens
Infoshares	Infoshare Call for Proposals	12/9/23	https://connect.geant.org/2023/09/12/its-time-for-you-to-propose-an-infoshare
Stakeholder engagement	TF-EDU	1/8/23	https://connect.geant.org/2023/08/01/data-sharing-in-education-tf-edu-meets-in-copenhagen-11-september

Topic Area	Activity	Date	Link
Stakeholder engagement	SIG-Marcomms	28/6/23	https://connect.geant.org/2023/06/28/sig-marcomms-goes-to-armenia-to-talk-project-comms-4-5-october-2023
Stakeholder engagement	SIG-Marcomms	13/6/23	https://connect.geant.org/2023/06/13/promoting-the-value-proposition-of-the-global-re-community-sig-marcomms-meets-in-tirana
GÉANT Community Award	Community Award	6/6/23	https://connect.geant.org/2023/06/06/2023-geant-community-award
Innovation Programme	Innovation Programme	1/6/23	https://connect.geant.org/2023/06/01/the-2023-geant-innovation-programme-awards-funds-to-10-new-idea-from-the-community
Network	SIG-NOC	23/5/23	https://connect.geant.org/2023/05/23/do-you-see-what-i-see-network-experts-meet-in-stockholm
Infoshares	Infoshare: Network Development Service Updates	16/5/23	https://connect.geant.org/2023/05/16/infoshare-network-development-service-updates-23-05-2023-1100cest
Security	SIG-ISM	11/5/23	https://connect.geant.org/2023/05/11/navigating-the-security-landscape-insights-from-the-hybrid-sig-ism-meeting
Stakeholder engagement	SIG-Digital Health Data	08/05/23	https://connect.geant.org/2023/05/08/amazon-aws-webinar-on-the-european-health-data-space-may-10
Security	SIG-ISM	13/4/23	https://connect.geant.org/2023/04/13/security-management-professionals-to-meet-in-trondheim-sig-ism-may-3-4-2023
Infoshares	Infoshare: World Quantum Day	12/4/23	https://connect.geant.org/2023/04/12/infoshare-celebrating-world-quantum-day-14-april-2023
GCP	GÉANT Community Code of Conduct	5/4/23	https://connect.geant.org/2023/04/05/geant-community-code-of-conduct
Business practices	SIG-MSP	30/3/23	https://connect.geant.org/2023/03/30/hybrid-sig-msp-meeting-in-the-beautiful-historical-premises-of-zeist-city-hall
Infoshares	Infoshare: perfSONAR 5.0	27/3/23	https://connect.geant.org/2023/03/27/perfsonar-5-0-infoshare-31-03-23-1100-cest
Infoshares	Infoshare: NIS2 directive	22/3/23	https://connect.geant.org/2023/03/22/infoshare-nis2-directive-follow-up-event
Infoshares	Infoshare: NETDEV Incubator	20/3/23	https://connect.geant.org/2023/03/20/geant-infoshare-netdev-incubator-29-march-1300cet

Topic Area	Activity	Date	Link
GÉANT Community Award	Community Award	20/3/23	https://connect.geant.org/2023/03/20/2022-geant-community-award-submit-your-vote
Cloud	SIG-CISS	20/3/23	https://connect.geant.org/2023/03/20/interview-with-claudio-pisa-cloud-devops-at-garr-and-member-of-sig-ciss
Stakeholder engagement	SIG-Marcomms	08/3/23	https://connect.geant.org/2023/03/08/spring-sig-marcomms-meeting-21-22-feb-2023-communications-at-24-celsius
Innovation Programme	Innovation Programme	28/2/23	https://connect.geant.org/2023/02/28/the-geant-innovation-programme-presents-the-2022-awarded-projects-on-13-march
Cloud	SIG-CISS	24/2/23	https://connect.geant.org/2023/02/24/10th-sig-ciss-cloud-interoperable-software-stacks-at-cs3-conference-barcelona-online-8-march-2023
Network	SIG-NOC	8/2/23	https://connect.geant.org/2023/02/08/the-insights-of-your-network-do-you-see-what-i-see-sig-noc-16-17-may-2023-in-stockholm
Network	SIG-NGN	8/2/23	https://connect.geant.org/2023/02/08/save-the-date-sig-ngn-is-meeting-on-20-april-2023-in-prague
Stakeholder engagement	SIG-Marcomms	11/1/23	https://connect.geant.org/2023/01/11/interview-with-lonneke-walk-chair-of-the-special-interest-group-on-marketing-and-communications
GÉANT Community Award	Community Award	10/1/23	https://connect.geant.org/2023/01/10/3-2-1-go-submit-your-nominations-for-the-2023-geant-community-award

Table B.1: Communications overview of all blog posts from 2023-2024

References

[CONNECT47]	https://connect.geant.org/wp-content/uploads/2024/10/GEANT-CONNECT-47.pdf
[CS3]	http://www.cs3community.org/
[CS3MESH4EOSC]	https://cs3mesh4eosc.eu/
[FIRST]	https://www.first.org/
[GA(15)046_GCPToR]	https://wiki.geant.org/download/attachments/27459590/GA%2815%29046-GE%CC%81ANT-Community-Programme.pdf?version=1&modificationDate=1457359194565&api=v2
[GC_website]	https://community.geant.org/
[GCA]	https://community.geant.org/community-award/
[GCA_2023]	https://connect.geant.org/2023/06/06/2023-geant-community-award
[GCA_2024]	https://connect.geant.org/2024/06/11/meet-your-2024-geant-community-award-winner
[GC_Infoshares]	https://community.geant.org/infoshares/
[GCP5]	https://geant.box.com/s/jw2tspfcarf212whj04zsvkqh3v55er
[GCP_TA]	https://community.geant.org/community-programme-portfolio/thematic-areas/
[GCP_video]	https://www.youtube.com/watch?v=6dSQabLsQGg
[GCP_website]	https://community.geant.org/community-programme/
[GCP_wiki]	https://wiki.geant.org/display/GCP
[GCT]	https://community.geant.org/community-tools/
[GeCC]	https://eduroam.org/about/
[GENDEREQ]	https://community.geant.org/gender-equality-principles/
[GIP]	https://www.geant.org/Innovation/Pages/Innovation-Programme.aspx
[GIP23_Showcase]	https://wiki.geant.org/pages/viewpage.action?pageId=695338319
[GIP_GfA]	https://community.geant.org/wp-content/uploads/2022/02/GEANT-Innovation-Programme-Guide-for-Applicants.pdf
[GIP_FP]	https://community.geant.org/community-programme-portfolio/innovation-programme/funded-projects/
[GIP_Infoshare]	https://community.geant.org/infoshares/#VHrP6Hlmjuk
[GIP_PT]	https://geant.box.com/s/inwl4pg56nre81cexa07cu2yksf8jygt
[GN4-3N]	https://network.geant.org/gn4-3n/
[GUIDELINES]	https://community.geant.org/innovationprogramme/
[HAMU]	https://www.hamu.cz/en/
[LOLA]	https://lola.conts.it/
[NetYCE]	https://netycce.com/
[NPAPWS]	https://npapws.org/
[NPAPWS24]	https://npapws.org/visit/
[OCM]	https://wiki.geant.org/display/OCM/Open+Cloud+Mesh [federated login required]
[openUp2U]	https://up2university.eu/open/
[OPENSOURCE]	https://wiki.geant.org/display/GREEN/Open+Source+Principles+for+NRENs
[Pastebin]	https://pastebin.com/
[PAW]	https://wiki.geant.org/pages/viewpage.action?pageId=121345977 [federated login required]
[POSEMO]	https://www.posemo.io/
[PRINCIPLES]	https://community.geant.org/community-principles/

[REFEDS]	https://refeds.org/
[Ryuk]	https://www.ncsc.gov.uk/news/ryuk-advisory
[SC_WINS]	https://women-in-networking.net/
[Schrems_II]	https://www.europarl.europa.eu/RegData/etudes/ATAG/2020/652073/EPRS_ATA(2020)652073_EN.pdf
[SECURITY_DAYS]	https://security.geant.org/geant-security-days-2024/
[SIG-AI]	https://community.geant.org/sig-ai/
[SIG-CISSL]	https://community.geant.org/sig-cissl/
[SIG-DHD]	https://community.geant.org/sig-ehealth/
[SIG-ISM]	https://community.geant.org/sig-ism/
[SIG-Marcomms]	https://community.geant.org/sig-marcomms/
[SIG-MSP]	https://community.geant.org/sig-msp/
[SIG-Multimedia]	https://community.geant.org/sig-multimedia/
[SIG-NGN]	https://community.geant.org/sig-ngn/
[SIG-NOC]	https://community.geant.org/sig-noc/
[SIG-PROCUREMENT]	https://community.geant.org/sig-procurement/
[SIG-RED]	https://community.geant.org/sig-red/
[SIG-TFN]	https://community.geant.org/sig-tfn/
[SIG-SUSTAINABILITY]	https://community.geant.org/sig-sustainability/
[TF-CSIRT]	https://community.geant.org/tf-csirt/
[TF-CSIRT_Meetings]	https://tf-csirt.org/tf-csirt/meetings/
[TF-CSIRT_News]	https://tf-csirt.org/news/
[TF-CSIRT_SC]	https://tf-csirt.org/tf-csirt/steering-committee/
[TF-CSIRT_TRANSITS_Mats]	https://tf-csirt.org/transits/transits-materials/
[TF-DLT]	https://community.geant.org/tf-dlt/
[TF-DLT_Belnet]	https://www.belnet.be/en/news-events/news/university-pilot-proves-value-a-european-blockchain
[TF-EDU]	https://community.geant.org/tf-edu/
[TF-EDU_Wiki]	https://wiki.geant.org/pages/viewpage.action?pagId=108018347
[TF-eHealth]	https://community.geant.org/tf-ehealth/
[THEMATIC]	https://community.geant.org/community-programme-portfolio/thematic-areas/
[UN_SDG]	UN Sustainable Development Goals https://sdgs.un.org/goals
[VAN-RIJSWIJK-DEIJ]	https://connect.geant.org/2024/03/27/planning-a-more-secure-internet-interview-with-professor-roland-van-rijswijk-deij
[WISE]	https://wise-community.org/

Glossary

AARC	Authentication and Authorisation for Research and Collaboration
AI	Artificial Intelligence
API	Application Programming Interface
AUP	Acceptable Use Policy
AWS	Amazon Web Services
Bof	Birds of a Feather
CRO	Community Relations Office
CTI	Cyber Threat Intelligence
DHD	Digital Health Data
DNS	Domain Name System
EBSI	European Blockchain Services Infrastructure
ENISA	European Union Agency for Cybersecurity
EOSC	European Open Science Cloud
FIRST	Forum of Incident Response and Security Teams
FPGA	Field-Programmable Gate Array
GA	General Assembly
GCA	GÉANT Community Award
GCC	GÉANT Community Committee
GCP	GÉANT Community Programme
GDPR	General Data Protection Regulation
GeCC	Global eduroam Governance Committee
GIP	GÉANT Innovation Programme
GLAD	GÉANT Learning and Development
GPPC	GÉANT Programme Planning Committee
HAMU	Music and Dance Faculty of the Academy of Performing Arts in Prague
IaaS	Infrastructure as a Service
ICT	Information and Communications Technology
ISO	International Organisation for Standardisation
KPI	Key Performance Indicator
LA	Learning Analytics
LAN	Local Area Network
LMS	Learning Management System
MD-VPN	Multi-Domain Virtual Private Network
MPLS	Multi-Protocol Label Switching
NIS2	Network and Information Security 2
NPAPWS	Network Performing Arts Production Workshop
NREN	National Research and Education Network
OC	Oversight Committee
OCM	Open Cloud Mesh
P4	Programming Protocol-independent Packet Processors
PAIR	Project Annual Internal Review
PDK	Policy Development Kit
PMO	Project Management Office

PoC	Proof of Concept
R&E	Research and Education
RARE	Router for Academia, Research & Education
REFEDS	Research and Education FEDerations
RFQ	Request for Quotation
SC	Steering Committee
SCI	Security for Collaborating Infrastructures
SIG	Special Interest Group
SIG-CISS	Special Interest Group on Cloud Interoperable Software Stacks
SIG-ISM	Special Interest Group on Information Security Management
SIG-Marcomms	Special Interest Group on Marketing Communications
SIG-MSP	Special interest Group on Management of Service Portfolios
SIG-Multimedia	Special Interest Group on Multimedia Applications
SIG-NGN	Special Interest Group on Next-Generation Networks
SIG-NOC	Special Interest Group on Network Operations Centres
SKA	Square Kilometre Array
SOC	Security Operations Centre
SSI	Self Sovereign Identity
T&F	Time and Frequency
TERENA	Trans-European Research and Education Networking Association
TF	Task Force
TF-CSIRT	Task Force on Computer Security Incident Response Teams
TF-DLT	Task Force on Distributed Ledger Technologies
TF-EDU	Task Force on Educational Activities and Services
TF-eHealth	Task Force on eHealth
TF-RED	Task Force on Research Engagement Development
TI	Trusted Introducer
TNC	The Networking Conference
ToR	Terms of Reference
TRL	Technology Readiness Level
VC	Videoconference
VLE	Virtual Learning Environment
VoD	Video on Demand
VPN	Virtual Private Network
WG	Working Group
WISE	Wise Information Security for Collaborating e-Infrastructures
WP	Work Package
WP3	Work Package 3 User and Stakeholder Engagement
WP3 T4	WP3 Task 4 Community Programme