



HARMONISING THE SOFTWARE DEVELOPMENT PROCESS IN THE GEANT COMMUNITY

Introduction

The GÉANT software community takes part in the collaborative development of applications and products which support services delivery. Along with the progressive delivery of services, the importance of reliable and resilient software components has increased to meet the demands of users.

Every service in GÉANT has to be developed with the highest quality attainable in order to fulfill the demands of the research and education community, and on the other hand to complement services provided by member NRENs. Efforts described in this article are tackling the challenge of keeping up with the quality standards while maintaining a large number of software projects developed in a distributed environment with the effort and expertise of skilled staff coming from all member NRENs.

Who we are and what we are about

The software management (SWM) team in the GÉANT (GN4-2) Project's Service Transition and Software Management task is assigned to support the software development teams (SDTs) in harmonisation of software management and development practices, as well as to help in the adoption of consistent software management practices across GÉANT services.

Additionally, the SWM team performs secure code and quality code audits of services in transition and in production and organisation of trainings (School of Software Engineering, Secure Code Training) for the GÉANT software community.

Harmonisation and improvement of software management and

development practices in GN4-2 aims to help software development teams to:

- Keep to the project budget.
- Minimise project delays.
- Improve product quality.
- Improve the probability of project success.

This can be achieved by improving the awareness of the effective software development methodologies (SDMs) and/or best practices. The SWM team started by exploring the current development practices, with the aim to learn what could be done to improve the efficiency of SDTs, what obstacles they have faced etc.

In that process, the SWM team encourages the developers to share their experiences and discuss methodologies applied in day-to-day work. The current situation in GÉANT

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regarding the software development methodologies usage was taken into consideration to build solid grounds and determine the list of required activities for future actions.

GÉANT software catalogue

More than 30 software projects are being developed by around 20 software development teams of highly skilled professionals originating from different member NRENs. There is a number of retired software projects as well. A central and complete project catalogue is a must-have feature for federated community of software developers, to gain maximum benefits for collaborative work and alleviate some negative effects of team distribution, partial involvement to the project and similar. Such information repositories are present in large software communities (e.g. Apache Projects Directory), and evolve together with a growing portfolio of software projects.

The GÉANT Software Catalogue is a web-based service acting as a front-end for existing databases and services spread over the whole GÉANT software development ecosystem. This new system will deliver an overview of GÉANT software development in a clear and comprehensive way. The new service won't introduce yet another information repository by duplicating existing records - it will retrieve the data

from existing sources consolidating the information in a unified and harmonised way.

The GÉANT Software Catalogue is in its initial phase at the moment. This phase aims to release a new service, which can complement the existing GÉANT product portfolio i.e. GÉANT toolset - Intranet, wiki pages, and software development infrastructure. The functional requirements for the Catalogue come from software teams, GÉANT coordinators, project managers and GÉANT activity/task leaders. A proof of concept implementation was successfully presented during GÉANT Symposium 2017 during a session on software development. As a result an active discussion on its target shape has started.

More information about this idea can be found at <https://wiki.geant.org/display/timops/Indexing+the+GEANT+software+projects>

Supporting the software community

GÉANT Symposium 2017 – side meeting

The objective of the side meeting was to gather software developers from across GN4-2 as a forum for exchanging ideas and identifying any issues and obstacles that they are facing in their day-to-day work. The usage of the SDM was a focal point of the meeting. Participants were encouraged to engage in a discussion about software development methodologies they are using. The most important points that were highlighted during the meeting were:

- There is an awareness about the SDMs within GÉANT teams and some have observed tangible benefits from using SDMs selectively.
- The teams that have applied selected SDM practices rely on Scrum, Kanban or XP and are often adjusting processes (e.g. extending time periods) to their abilities.
- Most of the attendees confirmed their interest in participating in a workshop about practical implementation of SDM.
- Most of the attendees also expressed their interest in participating in a new task force on this matter.

GÉANT Software Development Infrastructure

The intention of the GÉANT Software Development Infrastructure talk, which was a part of the "Software Development in GÉANT" session during the GÉANT Symposium was devoted to presenting selected services of GÉANT Software Development Infrastructure with a focus on new or updated functions of provided services.

Jakub Gutkowski, who is the technical leader of NMaas (Network Management as a Service), presented how the life-cycle software with continuous deployment implemented in their project was implemented with the use of services provided by SWDSD.

More information about SWD services are available on <http://software.geant.net>

Planned activities

In accordance with the aforementioned, the SWM team took suggestions for the creation of a proposal for a Task Force on Software Management and Development (TF-SMD) in order to support the development and service provision for GÉANT and NREN software development teams and promote the use of best practices for software development. TF-SMD would create the opportunity to introduce the industry practices and standards as well as lessons learned from other institutions. Additionally, TF-SMD would get familiar with NRENs' experiences in building the SDTs, help to include the NRENs practices into GN4-2 and act as a connection between GÉANT, NRENs and industry in the field of software development.

Contact us

The SA2 T1 team is waiting for your comments and questions regarding the harmonisation of the software development process in GÉANT community.

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