France Grilles Operations Model

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1. Introduction

This document presents how France Grilles operations are organized. It explains how NGI internal, national and international tasks are defined and how responsibilities are shared. **It is meant to be a reference document for France Grilles staff and partners.**

This model is built from bottom to top. It describes what is – or should be – done, while allowing for best practices to be formalized and applied. As a sustainable model beyond the initial set-up of the French NGI, it aims for a clear representation of daily work, missions and responsibilities.

We propose to decompose France Grilles Operations into:

- infrastructures (What are our tools)
- missions and tasks (what do we do with them)
- work sharing (Who does what)

2. Infrastructures

2.1.Our definition of "infrastructure"

"Infrastructure is the basic physical and organizational structure needed for the operation of a society or enterprise, or the services and facilities necessary for an economy to function." (Source: Wikipedia)

In the context of this document we call "infrastructure" a set of machines (hardware) and services (software) that are used together to answer to a specific need.

2.2. France Grilles infrastructures

2.2.1. Foundation infrastructures

We call "foundation infrastructures" the infrastructures running grid middleware and that provide the base of the Grid, or emulate it for testing or training purposes. They are clearly identified as:

- **Production infrastructure**: the set of machines and services providing a production grid service;
- **Test infrastructure**: the set of machines and services providing a base for testing new resources, middleware and components;
- **Training infrastructure**: the set of machines and services providing a base for training new users and administrators alike;
- **Network infrastructure**: the set of machines and services providing the necessary network connections in order for the above to work.

2.2.2. Control infrastructures

We call "control infrastructures" the infrastructures built to operate, facilitate, control, supervise or assess the activity of the foundation infrastructures. They are identified as:

- **Monitoring infrastructure**: the set of machines and services for monitoring the status of resources and services from the foundation and control infrastructures; *e.g. Nagios box*
- **Accounting infrastructure**: the set of machines and services for measuring and reporting the usage of resources from the foundation infrastructures; *e.g. national accounting DB*
- **Security infrastructure**: the set of machines and services for facilitating the enforcement of security policies and procedures on the foundation and control architectures; *e.g. national Pakiti server*
- **Tools infrastructure**: the set of machines and services for facilitating operations, support and communication on and between the foundation and control architectures; *e.g. helpdesk, wiki, mailing lists*
- **Certification authority (CA) infrastructure**: the set of machines and services for providing users with credentials to use the foundation and control architectures. *e.g. CA servers*

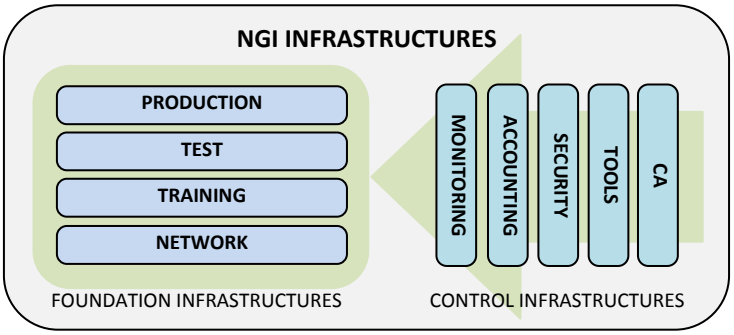

Fig.1: Representation of France Grilles Infrastructures

3. Description of work

3.1.Time-bound work: project approach

A project approach is useful to represent time-bound or one-shot activities that have a beginning and an end. In that respect, some of our activities follow project cycles and can be formalized using a project management methodology. We propose here a simple 3-steps cycle (fig.2):

- **Definition**: define "*what*"
- **Planning**: define "*how*"
- **Execution**: do "*what*" according to "*how*"

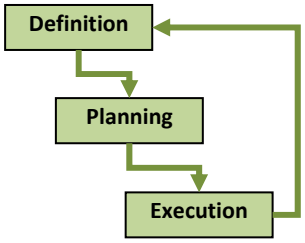

Fig.2: Proposed 3-steps project cycle

This approach can be applied to define global project phases. A given topic or project could then be decomposed into:

- A definition phase (**needs analysis**)
- A planning phase (**feasibility and implementation study**)
- An execution phase (**setup and realization**)

Most simple projects do not need to be formalized or split further. In the case of large, long or complex projects, each phase could itself be decomposed into those 3 steps, as shown on Fig.3. Ultimately, the overall process could be done through as much iteration as needed.

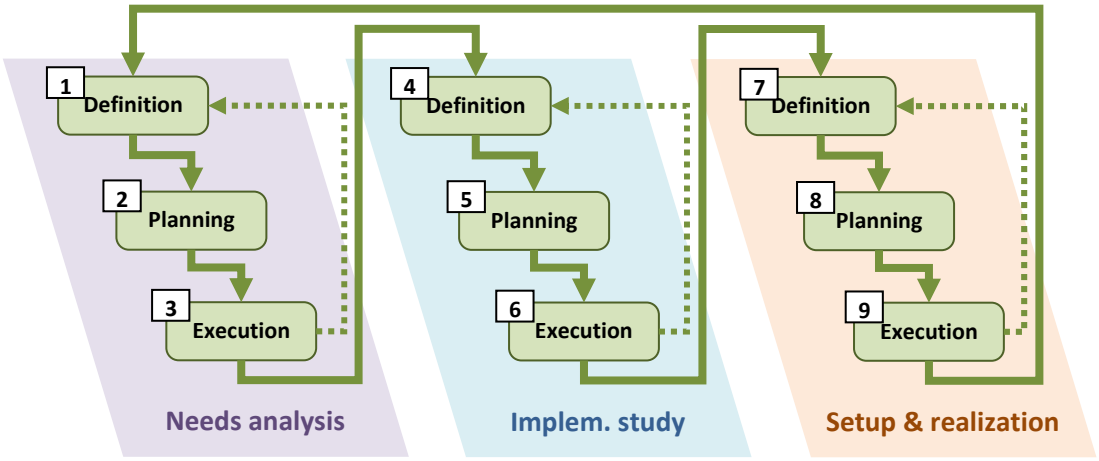

Fig.3: Project phases and their internal decomposition

3.2.Regular work: functional approach

A project approach is not adapted to represent non time-bound, persistent objectives such as "running an infrastructure". A good way to decompose these activities is to split them into tasks that involve different functions:

- **Strategic coordination**. Tasks from this function include:
  - Definition and follow-up of strategies and long term plans
  - Coordination with partners outside of NGI operations (EGI, EMI, EUGridPMA…)
  - Intra- and inter-activity coordination
  - Definition and exploitation of indicators and metrics for concerned activities
- **Technical supervision**. Task from this function include:
  - Definition of technical plans to implement strategic plans
  - Supervision of this implementation
  - Establishment of indicators and metrics for the relevant activity
  - Watch activity on technological evolutions
- **Implementation**. This corresponds to the realization of the technical plans and includes:
  - Development
  - Day-to-day operations
  - Procedures follow-up
- **Support and follow-up**. Task from this function include:
  - Following up incidents
  - Providing expertise and support to sites and users
- **Service administration**. These tasks are linked to a given infrastructure. This corresponds to:
  - Installation and configuration of the relevant software/middleware
  - Regular service administration
  - Software upgrade and maintenance
- **Service hosting**. These tasks are linked to a given infrastructure. This corresponds to:
  - Machine installation
  - Hardware and system configuration
  - System monitoring to ensure machine availability
  - Hardware maintenance and upgrade

With regards to regular activities, time-bound activities are either:

- **An initialization**: A continuous activity is the output of a time-bound setup process

- **An improvement cycle**: regular activities lead to a time-bound improvement cycle (e.g. through technological watch)

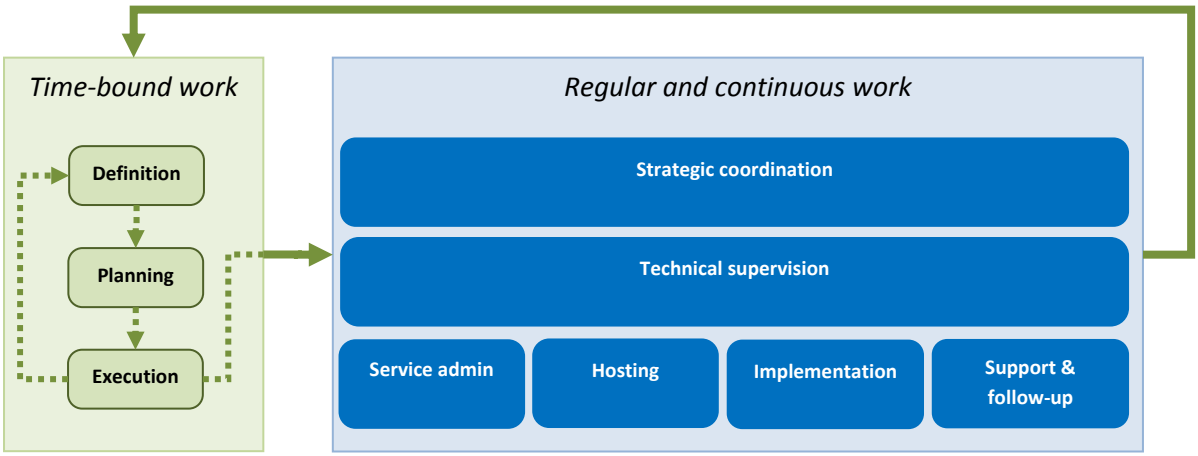

Fig.4: representation of France Grilles projects and regular activities

4. Sharing the work

Splitting work into **activities** (regular and continuous work) and **projects** (time-bound work) allows us to define missions that can either be to:

- Complete the entirety of a given **project**, or one of its phases
- Ensure day-to-day responsibility of a regular **activity**, or one of its tasks

Missions are entrusted on a case by case basis to individuals, experts groups or coordination bodies that are also given the responsibility to split these missions into tasks and share the work between themselves. When necessary, resulting tasks can be assigned to another group.

Coordination bodies are identified as:

- Technical Direction (DT)
- Executive Technical Committee (CTE)

Experts groups are formed around areas of expertise, identified as:

- Grid production and deployment
- Network
- Accounting
- Monitoring
- Security
- Certification Authority

Initial assignments and regular reviews are themselves strategic coordination missions which are entrusted to the Technical Direction and the Executive Technical Committee. This implies that responsibility of all time-bound projects is initially assigned to the DT or the CTE who can then delegate to the appropriate person or group.