Product Lifecycle process at CERN
Legend

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Symbols

- **Start point**: A red circle used to denote the beginning of a sequence.
- **End point**: Another red circle used to denote the end of a sequence.
- **Decision point**: A diamond shape used to indicate a decision point in the sequence.
- **Information box**: A green sticky note used to denote an information box.

**Sequence flow**: It is used to show the order (the sequence) in which activities will be performed.

**Message flow**: It is used to show the flow messages between two different process stakeholders that send and receive them.

**Association**: It is used to associate data, information and artifacts with flow objects.
Tasks

**Manual task:** performed without the aid of any business process execution engine or application.

**User task:** performed by a human with the assistance of a software application.

**Script task:** executed by a process engine.

**Send task:** this indicates the sending of a message to an external participant.

**Receive task:** this indicates that a message is arrived from an external participant.

**Loop marker:** it is used to represent an activity that is executed multiple times.
**Systems**

- **CartWeb**
  - Computer Aided Design tool used to design all CERN machines (V5 version)
  - Publishing tool of 2D data from SmarTeam to CDD
  - User interface purpose-built for manufacturing and installation follow-up of equipment

- **Product Lifecycle Management**
  - Product Lifecycle Management tool used to manage CERN 3D and 2D data.
  - CERN Drawing Directory, used to manage 2D drawings Quality Controls and Approval Process

- **NAMING PORTAL**
  - Web portal used by configuration managers to define machines equipment codes

- **EDMS**
  - Engineering Data Management System, used for document management (reviewing, approval, versioning, etc…)
  - Enterprise Asset Management system

- **EDMS: 1850603 v.1**
  - Traceability of Radioactive Equipment at CERN
Systems

LAYOUT DB
System used to manage the position of components in the machines and their technical parameters

SCADA
Supervisory control and data acquisition system

BAAN
ERP application

PANORAMA
Google Street like tool used for the visualization of the LHC tunnel

RADOS
Total Gamma Counter device

JMT
Job Management Application, mainly used for service/contract management

IMPACT
Intervention Application

Scheduling
Documents

- **Functional specification**
  Describes the requirements for a given change or a new piece of equipment.

- **Engineering specification**
  Describes how the requirements gathered in the functional specification will be fulfilled.

- **Technical specification**
  It is used as the basis of the call for tender process. It contains extra, commercial purposed paragraphs.

- **MME job**
  Contract between MME and a client (a CERN group) about the design/manufacturing of a component.
Documents

• **Space Reservation Request**
  Relating to a proposed change, describes how much space is needed and where.

• **Engineering Change Request (ECR)**
  Describes all aspects of a proposed change and assesses all potential impacts.
  E.g. impact on other systems, technical feasibility, planning, costs and/or safety aspects.

• **Launch Safety Agreement**
  Provides an overview of the Safety requirements applicable to the machine or detector.

• **Safety Work Package**
  Set of Project Safety Rules that have to be applied to each equipment installed in a specific area of the machine or detector.