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ESS Timing System Naming Guidelines

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1 Overview

The ESS Naming Convention[1] was agreed upon and approved at an early stage of the ESS project to ensure meaningful, short and structured names of signals and devices. Given the millions of signals to control and thousands of devices to operate, clear communication is essential among operators, physicists and engineers. The ESS timing system should follow the Naming Convention for these reasons.

1.1 Scope

This document includes some guidelines on defining the element names of the ESS timing system to fulfill the requirements of the ESS naming convention in a unified way.

Note that this is a very early draft document and should be updated as development progresses.

1.2 Target Audience

This document is targeted to ICS integrators of the ESS timing system. It is assumed that the reader has a good understanding of the ESS timing system.

[1] CHESS document ESS-0000757[1]

2 Naming Guidelines

The ESS naming convention especifies how signals and devices at ESS should be named to ensure meaningful, short and structured names. For more information on the ESS naming convention see [1].

The ESS naming convention names are composed by acronyms and abbreviations referred to as name elements with the following structure:

```
Section-Subsection:Discipline-DeviceType-Instance:Property.FIELD
```

These elements are sorted under area (Section and Subsection), device (Section to Instance) and configuration structures. An extra element, the Super Section, is not part of the device and signal names but it is used for sorting and filtering purposes in the Naming Service as well as in other systems where the names are used.

In this document only the guidelines for the area and device structures are given.

There are two different kinds of timing devices when it comes to naming: timing devices belonging to a subsystems of ESS, such as EVRs dedicated to a specific instance of beam instrumentation, and timing devices that are an intrinsic part of the timing generation and distribution. These two kinds of devices have different naming guidelines.

2.1 Timing generation and distribution devices

This includes the EVG, fan-out modules, low jitter 1 pps generators, GPS synchronization platforms and other devices used for generating the timing events, beam-related data broadcasted by the timing system, timestamps and synchronous clocks, and their distribution along the ESS facility. The different name elements should be set as follows:

- Super Section: `Central Services` for all the devices in this category.
- Section: `Timing` for all the devices in this category.
- Subsection: consists of 5 characters. The first two characters are `TD` for the timing distribution devices (basically fan-out modules), and `TM` for the timing master devices (EVG, GPS, signal generators, etc). The last 3 characters are numeric and correspond to the rack where the device is installed. Following this, the subsection element can have the values `TD010` to `TD180` and `TM070`. All devices related to the EVG will be installed in the MBL-070 rack and thus be in the `TM070` subsection.
- Discipline: `TS` (timing system) for all the devices in this category.
- Device Type: see Table 1.
- Instance: numerated as needed.

Device	Mnemonic	Description
Frequency Standard	FRS	Rubidium Frequency Standard 725
MRF Event Fan out	FOUT	Fan out
MRF Event Generator	EVG	
MRF Event Master	EVM	
MRF Event Receiver	EVR	
MRF Event Receiver Stand alone	STEVR	
Oscilloscopes	OScope	
Signal Generator	SiGen	Signal Generator
Synchronization Platform (GPS)	GPS	

Table 1 Device Types for the timing system devices.

2.2 Timing devices belonging to a specific subsystem

Usually this case only covers EVRs, although in some special cases it might also include a fan-out. The Section, Subsection and Discipline of the parent ESS subsystem is used. The Device Type is the same as in Table 1. The Instance is a number, but if needed, a prefix that specifies a device type if the EVR is related to such part of the subsystem or discipline might be used.

Bibliography

[1] ESS-0000757. *ESS Naming Convention.*