Reporte Semanal de Actividades

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Actividades realizadas

1. Atender las *nuevas* observaciones del especialista en Ing. de Software de la UAS.

2. Traducción del reporte al inglés.

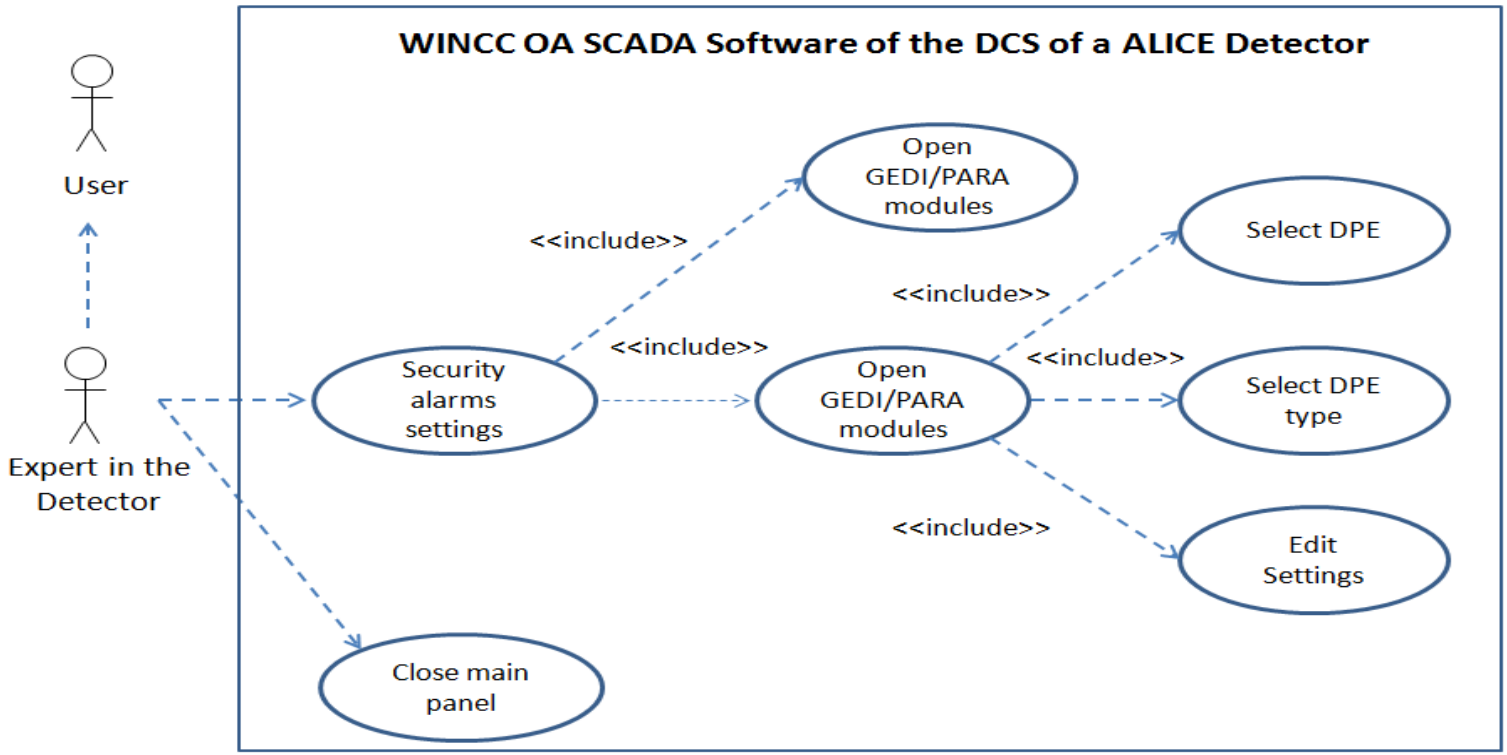
3. Revisión de artículos de AMANDA relacionados con el simulador.

4. Revisión de posibles revistas para someter el artículo.

1. Atender las nuevas observaciones del especialista en Ing. de Software de la UAS

a) Revisión de estilo del documento

b) Revisión de diagramas



2. Traducción del reporte al inglés.

Application of a Software Engineering Methodology in the Control System Design of a Single Detector in the ALICE Experiment

First A. Author, *Fellow, IEEE*, Second B. Author, and Third C. Author, Jr., *Member, IEEE*

Abstract— **This document presents a methodology to model design, commissioning and operation process of the control system software of a single detector in the ALICE (A Large Ion Collider) experiment for the second phase (Run-II) of the Large Hadron Collider (LHC) applying software engineering techniques. First, a brief description of the architecture and control system elements is presented. Subsequently, an analysis of standardized modeling diagrams is done as: use cases, and diagrams of context, activities, sequential and class, belonging to Unified Modeling Language ® (UML). This analysis is done from the views of main stakeholders in the developing process of the ALICE central Detector Control System (DCS). Also the state diagrams are presented using a proper notation of the European Organization for Nuclear Research (CERN), adapted for the Joint COntrols Project (JCOP). Finally, this modeling methodology is applied to the control system development for the AD (ALICE Diffractive) detector installed in the experiment.**

Index Terms—**ALICE, CERN, Detectors, JCOP, LHC, UML**

electrons, pions, kaons, etc.) that constitute the matter of our universe actually.

ALICE detector weighs 10,000 tons with 26 m length, 16 m high and 16 m width. The experiment is located in a wide cavern below ground level, near St Genis-Pouilly community in France, receives LHC beams. ALICE collaboration has more than 1,000 scientist from more than 100 physics institutes in 30 countries. Currently, ALICE experiment has 19 detectors for operation in the Run-II of LHC.

II. DETECTOR CONTROL SYSTEM (DCS)

A. General description

One of the most important systems of this experiment is the ALICE control system, which perform all control activities in order to ensure safety and proper operation of this experiment [2]. In addition, ALICE control system consists of online systems: Detector Control System (DCS), Data Acquisition (DAQ), Trigger (TRG), High-Level Trigger (HLT)

3. Revisión de artículos de AMANDA relacionados con el simulador.

- DCS Offline
- Acceso externo a los datos de condiciones de control.
- Shuttle Framework
- Framework de software de computo

4. Revisión de posibles revistas para someter el artículo

a) International Journal of Engineering and Science - IJES
b) International Refereed Journal of Engineering and Science - IRJES
c) International Journals of Engineering and Sciences (IJENS)
d) International Journal of Engineering & Technology IJET-IJENS
e) International Journal of Advanced Computer Science and Applications (IJACSA) - TR
f) Journal of Computer Science and Technology
g) International Journal of Advanced Engineering Research and Science (IJAERS)

Actividades Planeadas

- Atender las observaciones de los asesores de la versión en inglés.

- Enviar a revisión la versión final a Peter Chochula – Revista (verificar con los asesores).

- Continuar con los procesos de simulación.