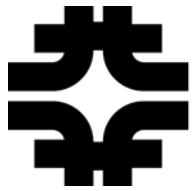# Subgroups and Scenarios
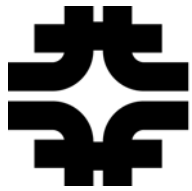
Erik Gottschalk

May 12, 2005

Overview

- **Split into two subgroups (accelerator & detector) to develop requirements.**

- **For next week, develop at least 3 scenarios and identify stakeholders**

- **Example scenario**

Two Subgroups

Split the Core Committee into two working groups to develop requirements. Members of the Advisory Committee may contribute to the work.
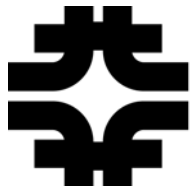
Proposed Accelerator Subgroup:
- **Elvin Harms**
- **Michael Lamm**
- **Mike Lamont**
- **Elliott McCrory**
- **Suzanne Panacek**

Proposed Detector Subgroup:
- **Erik Gottschalk**
- **Shuichi Kunori**
- **Kaori Maeshima**
- **Patty McBride**

Note: At some point we will need to develop scenarios that involve both groups.

Assignment for next week

• **Each subgroup should develop at least three scenarios ("use cases").**

• **We will review each other's scenarios at next week's meeting (May 19).**

While developing the scenarios, ask yourself the following questions:

- **Why would someone need to work in the Remote Center, as opposed to working at home or a home institution.**

- **Why would someone need to contact the Remote Center, as opposed to contacting a control room at CERN.**

Sample Scenario

Goal: to diagnose an intermittent hardware failure in the CMS pixel readout system using a new data-quality monitoring tool

Actors:

- **CMS physicist from Nebraska**

- **CMS shift personnel at CERN**

- **Fermilab remote operations personnel**

Scenario:

- **An alarm is triggered in the CMS control room by a data-quality monitoring application just before lunch (~ 11:53 Central European Summer Time). The alarm indicates that the tracking efficiency in one hemisphere of the CMS detector is lower than (and out of range) of the tracking efficiency in the opposite hemisphere.**

Sample Scenario (cont.)

Scenario:

• CMS shift personnel determine that this is the first time that this alarm has occurred (no previous incidents mentioned in ELog, no guidance in the procedures).

• The code that triggered the alarm was installed approx. one week earlier, and the developer was a physicist from Nebraska.

• A call is placed to the physicist's mobile phone.

• The physicist is asleep at home (~ 4 am, Mountain Time Zone) when he receives the call.

• The physicist logs in to access the monitoring information, and verifies that his code appears to have detected a real problem (ie. low tracking efficiency in the forward pixel detector).

• He notices that the tracking efficiency in the "+" hemisphere has always (during the past week) been lower than the tracking efficiency in the "-" hemisphere, but this time it exceeded a threshold value.

Sample Scenario (cont.)

Scenario:

• **The physicist starts a monitoring job that looks at data that is available for data-quality monitoring on a disk at CERN. The goal is to plot the discrepancy in the pixel tracking efficiency in finer time bins.**

• **The monitoring job shows that there seems to be an intermittent failure, one that has occurred about 10 times during the past week.**

• **The physicist calls the Fermilab Remote Center and asks them to display hit distributions for the entire forward pixel detector (for specific time periods) on the high-resolution video wall.**

• **The display shows that a region that corresponds to an entire forward-pixel blade (~ 200,000 pixels) is dead during certain time periods.**

• **It also shows that a similar sized region has twice the usual occupancy, suggesting that pixel hits from one region of the detector are being interpreted as coming from a different region.**

• **The Fermilab remote operations personnel contact the responsible person for the forward-pixel detector, inform the CMS control room personnel of the problem, and make an entry in the ELog.**

Summary

- **Split into two subgroups (accelerator & detector)**

- **Each subgroup will develop at least three scenarios for next week's meeting (you can use REMOP@fnal.gov to exchange e-mail).**

- **Next week we will review each other's scenarios**

- **Each subgroup should also identify stakeholders**