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Dashboard Management

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***Abstract*— In current situation the PLM events are monitored manually which is a very tedious and time consuming job. Due to this appropriate action is not taken on time. To eliminate these hurdles an easy and user friendly DASHBOOARD is developed. This aspect said users to better retrieve experiment and familiarize themselves with their data.**

The present work involves the study and development of a Software product which provides a fully automated solution for the complete analysis of events. User logins into the system using the password given to him and then the user will be able to access System. This software system will be an Event monitoring System which analyze the status of events in PLM and generate report in graphical format for TATA Technology user.

I. INTRODUCTION

There are number of problems that have been identified from the current system. The problems occurred from the database aspect, the time consuming, security (levels of users) and other aspects. One of the problems is time and cost constraint. For example, the customer can check the status of the events manually. So, it can waste their time to get information.

Another problem is that it is difficult to view the 'event history' for regular employee to make references. If they want to know the event history, they have to go through a tedious process. Besides, the current system is unreliable and data is redundant. Event monitoring System will be developed to solve the problem of the current system and to upgrade the company services efficiently. In short, we wish to automate the current system. Thus we are monitoring the events, analyzing the data and finally designing a Dashboard to represent data in graphical format.

II. SYSTEM FEATURES

1. Helps to improve the production efficiency
2. Reducing the decision making process time of the organization
3. Problems solving behavior is changed among the stakeholders, thus improving the team work between them.
4. Knowledge gaining process becomes feasible as data is organized into an understandable manner.
5. Helps to reduce production cost, improve quality.

III. EVENT MONITORING

In product lifecycle management a product has to go through various stages. When a product goes from one stage to another stage an action is triggered indicating that a product is successfully passed from one stage to the other. This action is known as event.

So now event monitoring means events are observed whether the event is passed or failed. The event can also show status as pending if it's not progressing. Software is provided by siemens which gives software support to Plm. The name of that software is teamcenter. With the help of this software huge number of workflows can be controlled .in this work flow there various sub object through which a product or part goes.so moving if product from one sub object to other event occur. These events are monitored due to which it becomes for analysing rate of number of passed events and failed events.

IV. PRODUCT LIFECYCLE MANAGEMENT (PLM)

Over the last few years product life cycle management has become one of the key technological and organizational approaches and enablers for the effective management of product development and product creation processes in engineering and in the manufacturing industry. PLM is the process which includes various stages of product life cycle from inception to manufacturing design then to service and finally disposal of product.

The current focus of all existing PLM solution is in the support of product development activities. PLM is a very complex , multi- layered and multidisciplinary topic a taxonomy of this multidimensional development space is necessary. The main focus of PLM development is within one manufacturing company including various distributed sites.Future PLM approaches within also integrate development and service partner as well as customer within the early stage of the product life cycle.

Future specialised PLM models methods and tool will better support the management of other downstream product life phases .event monitoring acts as a major component of predictive maintenance and supports as extension of the PLM approach the development of new product generation.

V. SYSTEM ARCHITECTURE

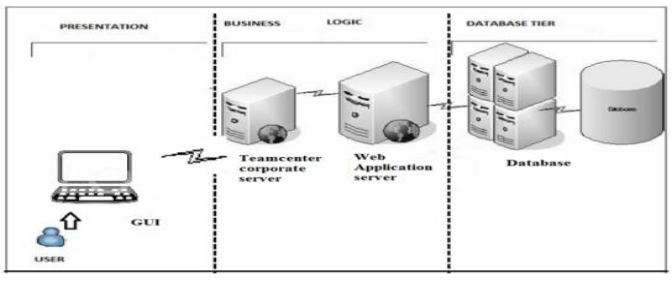

Fig 1. system architecture

It is three tier architecture. Teamcenter, from UGS, connects people and processes like creating, capturing, and sharing product knowledge to power innovation and productivity, through an integrated portfolio of proven solutions built on Teamcenter open PLM foundation. Teamcenter is the de facto standard for PLM, delivering modular, out-of-the-box solutions to fit every company's PLM vision. Executable file is responsible to capture events from Teamcenter. The output of this executable file is number of events passed failed and pending. This output is in text format and it is send using FTP to the Web application server where log is maintained. GUI is the dashboard where graphically the report of the events is displayed.

VI. ALGORITHMS

There are two major models in our project as follows-

i. Capturing events in teamcenter corporate
ii. Generation of report.

A. Algorithm for capturing events in teamcenter corporate server

1. Do
   1.1. Fire a query to teamcenter corporate server for capturing the events
   1.2. Analyse the status of events
   1.3. Copy the result to text file
   1.4. Send this output file by FTP to web application server
2. Do step 1 after every 30 minutes by Cron job facility of Linux

Analysis-
Time complexity: O (n)
The problem solved is in deterministic time. Hence it is NP complete.

B. Algorithm for generating report

1. Select duration for generating the report
2. n:= number of events
3. For 1 to n do
   3.1. if(monthly report)
      3.1.1. check the date of today's date(sys date)
      3.1.2. Calculate the date of previous month date
      3.1.3. Fetch the events from web application server by firing the query
      3.1.4. Select the way of representation
      3.1.5. If(presentation==tabular)
         Then show the result in tabular format
      3.1.6. If(presentation==graphical)
         Then show the result in graphical format
   3.2. If(yearly report)
      3.2.1. check the date of today's date(sys date)
      3.2.2. Calculate the date of previous month date
      3.2.3. Fetch the events from web application server by firing the query
      3.2.4. Select the way of representation
      3.2.5. If(presentation==tabular)
         Then show the result in tabular format
      3.2.6. If(presentation==graphical)
         Then show the result in graphical
   3.3. If(todatefromdate)
      3.3.1. check the date of today's date(sys date)
      3.3.2. Calculate the date of previous month date
      3.3.3. Fetch the events from web application server by firing the query
      3.3.4. Select the way of representation
      3.3.5. If(presentation==tabular)
         Then show the result in tabular format
      3.3.6. If(presentation==graphical)
         Then show the result in graphical

Analysis:
Time complexity: O (n)
The problem solved is in deterministic time. Hence it is NP complete.

VII. SYSTEM IMPLEMENTATION PLAN

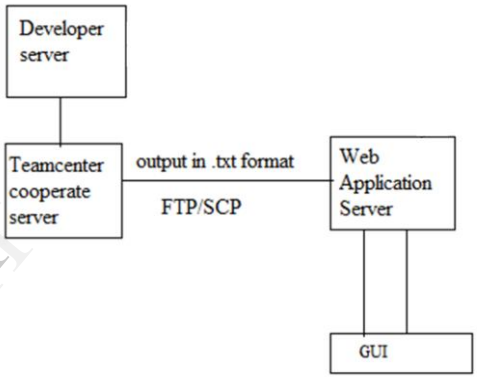

Fig. 2 System implementation

In system implementation, developer server is connected to the teamcenter corporate server. Executable file runs on this server. The output is copied to the text format and transferred to the web application server through ftp or scp. Information is fetched from web application server to GUI.

VIII. GRAPHICAL USER INTERFACE

The graphical user interface is the dashboard. A dashboard has become a Business Intelligence technology in the organizations worldwide. BI dashboard is also referred as enterprise dashboard. In this project information about events that is pass,fail and pending is represented in the graphical and tabular format. Graphical format like pie charts, bar graphs are used.

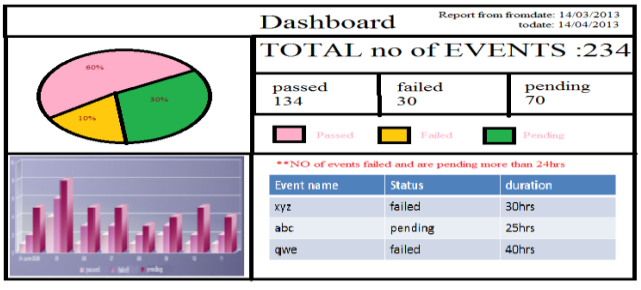

Fig 3. Graphical user interface(GUI)

IX. CONCLUSION

The first part of this paper gives an introduction to the field of PLM and event monitoring. Today's PLM-system focus on the entire Lifecycle of a product from inception, through design and manufacture, to service and disposal. The event is a trigger which helps the product to move from one stage to another stage in this lifecycle and analysis of these events is carried out. To carry out the analysis of these events dashboard is used which gives detailed information about events that takes place in different stages of product lifecycle. In this context architecture for implementation of event monitoring is provided which integrates the data from various stages of product lifecycle. This paper also provide system implementation plan and algorithms which helps to understand the system properly. Implementation of event monitoring in PLM will help to solve the problems efficiently and lead to increase in production.

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