



Experiment No.: 3

Title: Preparation of Software change request and report in
SCM

Aim: To Prepare Software change request and report in SCM

Resources needed: Internet Explorer, LaTeX Editor

Theory

Software change management is an umbrella activity that aims at maintaining the integrity of software products and items. Change is a fact of life but uncontrolled change may lead to havoc and may affect the integrity of the base product. Software development has become an increasingly complex and dynamic activity. Software change management is a challenging task faced by modern project managers, especially in an environment where software development is spread across a wide geographic area with a number of software developers in a distributed environment. Enforcement of regulatory requirements and standards demand robust change management. The aim of change management is to facilitate justifiable changes in the software product.

The following are the objectives of software change management process:

1. **Configuration identification:** The source code, documents, test plans, etc. The process of identification involves identifying each component name, giving them a version name (a unique number for identification) and a configuration identification.
2. **Configuration control:** Controlling changes to a product. Controlling release of a product and changes that ensure that the software is consistent on the basis of a baseline product.
3. **Review:** Reviewing the process to ensure consistency among different configuration items.
4. **Status accounting :** Recording and reporting the changes and status of the components.
5. **Auditing and reporting:** Validating the product and maintaining consistency of the product throughout the software life cycle.

Software Change Request Format

1.0 Change request Identification
1.1 Name, identification and description of software configuration item(s): The name, version numbers of the software configuration is provided. Also, a brief description of the configuration item is provided.
1.2 Requester and contact details: The name of the person requesting the change and contact details
1.3 Date, location, and time when the change is requested
2.0 Description of the change
2.1 Description : This section specifies a detailed description of the change request.

- 2.1.1 Background Information, Background information of the request.
- 2.1.2 Examples: Supporting information, examples, error report, and screenshots
- 2.1.3 The change : A detailed discussion of the change requested.
- 2.2 Justification for the change : Detailed justification for the request.
- 2.3 Priority : The priority of the change depending on critical effect on system functionalities

Software Change Report Format

- 1.0 Change report Identification
 - 1.1 Name, identification and description of software configuration item(s): The name, version numbers of the software configuration item and a brief description of it.
 - 1.2 Requester: The name and contact details of the person requesting the change.
 - 1.3 Evaluator : The name of the person or team who evaluated the change request.
 - 1.4 Date and time : When change report was generated.
- 2.0 Overview of changes required to accommodate request
 - 2.1 Description of software configuration item that will be affected
 - 2.2 Change categorization : Type of change, in a generic sense
 - 2.3 Scope of the change : The evaluator's assessment of the change.
 - 2.3.1 Technical work required including tools required etc. A description of the work required to accomplish the change including required tools or other special resources are specified here
 - 2.3.2 Technical risks : The risks associated with making the change are described.
- 3.0 Cost Assessment : Cost assessment of the requested change including an estimate of time required.
- 4.0 Recommendation
 - 4.1 Evaluator's recommendation : This section presents the evaluator's recommendation regarding the change
 - 4.2 Internal priority: How important is this change in the light of the business operation and priority assigned by the evaluator.

Procedure:

Identify any two change requests and formulate prepare Software Change Request Format and Software Change Report Format

Results: Software Change Request Format and Software Change Report Format.

Software Change Request

LaTeX Code:

```
\documentclass[a4paper,12pt]{article}
\usepackage{geometry}
\geometry{margin=1in}
\usepackage{titlesec}

\titleclass{\section}{straight}
\titleformat{\section}{\large\bfseries}{\thesection}{1em}{}
\titleformat{\subsection}{\normalsize\bfseries}{\thesubsection}{1em}{}
\titleformat{\subsubsection}[runin]{\normalsize\bfseries}{\thesubsubsection}{1em}{}

\title{Software Change Request}
\author{Project Team: Chandana Galgali, Prachi Gandhi, Mahek Thakkar, Harsh Singwi}
\date{\today}

\begin{document}

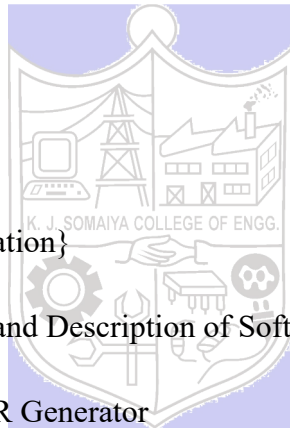
\maketitle

\section{Change Request Identification}

\subsection{Name, Identification, and Description of Software Configuration Item(s)}
\begin{itemize}
\item \textbf{Name:} Text-to-VR Generator
\item \textbf{Version:} 1.2.0
\item \textbf{Description:} This configuration item includes an AI-driven text parser that converts textual descriptions into virtual reality environments.
\end{itemize}

\subsection{Requester and Contact Details}
\begin{itemize}
\item \textbf{Name:} Prachi Gandhi
\item \textbf{Email:} prachi.g@example.com
\item \textbf{Phone:} +91 9876543210
\end{itemize}

\subsection{Date, Location, and Time}
\begin{itemize}
\item \textbf{Date:} 27 January 2025
\item \textbf{Location:} Mumbai, India
```



```
\item \textbf{Time:} 10:30 AM IST
\end{itemize}
```

```
\section{Description of the Change}
```

```
\subsection{Detailed Description}
```

```
\begin{itemize}
```

```
\item \textbf{Background Information:} Users are encountering difficulties with the AI
parser when handling nested object descriptions. This impacts the accuracy of rendered
virtual environments.
```

```
\item \textbf{Examples:} For instance, phrases like "a desk with books and a lamp" fail to
render correctly. Screenshots and error logs are attached for reference.
```

```
\item \textbf{The Change:} Update the AI parser to support the handling of nested object
descriptions. Modify the model to understand dependencies between objects for better
rendering accuracy.
```

```
\end{itemize}
```

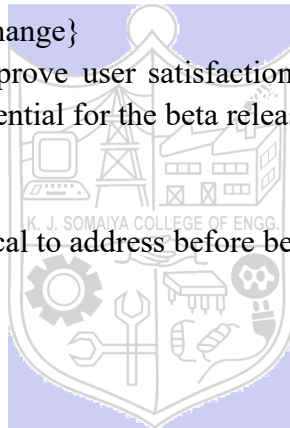
```
\subsection{Justification for the Change}
```

Enhancing the AI model will improve user satisfaction by ensuring accurate rendering of complex environments. This is essential for the beta release.

```
\subsection{Priority}
```

```
\textbf{High:} This change is critical to address before beta testing begins.
```

```
\end{document}
```



Software Change Request

Project Team: Chandana Galgali, Prachi Gandhi, Mahek Thakkar, Harsh Singwi

January 27, 2025

1 Change Request Identification

1.1 Name, Identification, and Description of Software Configuration Item(s)

- **Name:** Text-to-VR Generator
- **Version:** 1.2.0
- **Description:** This configuration item includes an AI-driven text parser that converts textual descriptions into virtual reality environments.

1.2 Requester and Contact Details

- **Name:** Prachi Gandhi
- **Email:** prachi.g@example.com
- **Phone:** +91 9876543210

1.3 Date, Location, and Time

- **Date:** 27 January 2025
- **Location:** Mumbai, India
- **Time:** 10:30 AM IST

2 Description of the Change

2.1 Detailed Description

- **Background Information:** Users are encountering difficulties with the AI parser when handling nested object descriptions. This impacts the accuracy of rendered virtual environments.
- **Examples:** For instance, phrases like "a desk with books and a lamp" fail to render correctly. Screenshots and error logs are attached for reference.
- **The Change:** Update the AI parser to support the handling of nested object descriptions. Modify the model to understand dependencies between objects for better rendering accuracy.

2.2 Justification for the Change

Enhancing the AI model will improve user satisfaction by ensuring accurate rendering of complex environments. This is essential for the beta release.

2.3 Priority

High: This change is critical to address before beta testing begins.

Software Change Report

LaTeX Code:

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\titleformat{\subsubsection}[runin]{\normalsize\bfseries}{\thesubsubsection}{1em}{}
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\author{Project Team: Chandana Galgali, Prachi Gandhi, Mahek Thakkar, Harsh Singwi}
\date{\today}
\begin{document}
\maketitle

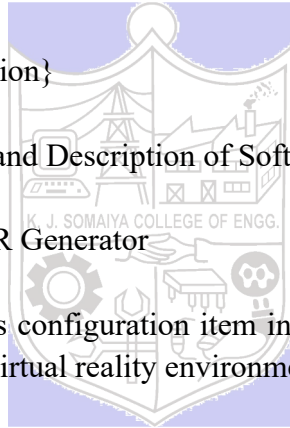
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\begin{itemize}
\item \textbf{Name:} Prachi Gandhi
\item \textbf{Email:} prachi.g@example.com
\item \textbf{Phone:} +91 9876543210
\end{itemize}

\subsection{Evaluator Details}
\begin{itemize}
\item \textbf{Name:} Chandana Galgali
\item \textbf{Role:} AI Model Development Lead
\item \textbf>Contact:} chandana.g@example.com
\end{itemize}

\subsection{Date and Time}
```



\begin{itemize}

\item \textbf{Date:} 27 January 2025

\item \textbf{Time:} 2:00 PM IST

\end{itemize}

\section{Overview of Changes Required}

\subsection{Affected Software Configuration Item}

The AI parser module responsible for understanding nested object descriptions is affected. Modifications are required to improve its accuracy in rendering virtual environments.

\subsection{Change Categorization}

This is classified as a \textbf{functional improvement}, addressing a core issue in the rendering logic of the AI parser.

\subsection{Scope of the Change}

\begin{itemize}

\item \textbf{Technical Work:} Update the AI model's architecture to better handle dependencies between objects in textual descriptions.

\item \textbf{Tools Required:} TensorFlow for model updates, Unity for testing rendered environments, and PyTorch for secondary validation.

\item \textbf{Technical Risks:} The changes might introduce latency in processing or require additional memory resources.

\end{itemize}

\section{Cost Assessment}

\begin{itemize}

\item \textbf{Estimated Time:} 10 working days

\item \textbf{Estimated Cost:} \$3,000 (based on developer hours and testing resources)

\end{itemize}

\section{Recommendation}

\subsection{Evaluator's Recommendation}

The proposed change is critical for improving the system's usability and meeting user expectations. It is recommended to prioritize this change and complete it before the beta release.

\subsection{Internal Priority}

This change has been assigned a \textbf{High Priority} by the evaluation team due to its critical impact on system functionality.

\end{document}

Software Change Report

Project Team: Chandana Galgali, Prachi Gandhi, Mahek Thakkar, Harsh Singwi

January 27, 2025

1 Change Report Identification

1.1 Name, Identification, and Description of Software Configuration Item(s)

- **Name:** Text-to-VR Generator
- **Version:** 1.2.0
- **Description:** This configuration item includes an AI-driven text parser that converts textual descriptions into virtual reality environments.

1.2 Requester Details

- **Name:** Prachi Gandhi
- **Email:** prachi.g@example.com
- **Phone:** +91 9876543210

1.3 Evaluator Details

- **Name:** Chandana Galgali
- **Role:** AI Model Development Lead
- **Contact:** chandana.g@example.com

1.4 Date and Time

- **Date:** 27 January 2025
- **Time:** 2:00 PM IST

2 Overview of Changes Required

2.1 Affected Software Configuration Item

The AI parser module responsible for understanding nested object descriptions is affected. Modifications are required to improve its accuracy in rendering virtual environments.

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This is classified as a **functional improvement**, addressing a core issue in the rendering logic of the AI parser.

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- **Technical Work:** Update the AI model's architecture to better handle dependencies between objects in textual descriptions.
- **Tools Required:** TensorFlow for model updates, Unity for testing rendered environments, and PyTorch for secondary validation.
- **Technical Risks:** The changes might introduce latency in processing or require additional memory resources.

3 Cost Assessment

- **Estimated Time:** 10 working days
- **Estimated Cost:** \$3,000 (based on developer hours and testing resources)

4 Recommendation

4.1 Evaluator's Recommendation

The proposed change is critical for improving the system's usability and meeting user expectations. It is recommended to prioritize this change and complete it before the beta release.

4.2 Internal Priority

This change has been assigned a **High Priority** by the evaluation team due to its critical impact on system functionality.

Questions:

1. What is the baseline? Explain the process of changes to baseline in detail.

Ans: Baseline refers to a formally approved version of a software configuration item (such as source code, documentation, or a deliverable) that serves as a reference point. It represents the state of the item at a specific time and ensures consistency during the development and modification process.

Process of Changes to Baseline:

- 1. Change Request Submission:** A formal change request is raised to propose modifications to the baseline. This request includes details such as the nature of the change, reasons for the change, and priority.
- 2. Impact Analysis:** The proposed change is analyzed to determine its technical, functional, and financial impact. Evaluators assess risks, scope, cost, and tools required for implementation.
- 3. Approval:** The change is reviewed by a Configuration Control Board (CCB) or project managers. They decide whether to approve, reject, or defer the change based on its criticality and impact.
- 4. Change Implementation:** Once approved, the change is implemented by developers or the concerned team. This involves updating the software configuration item and testing the updated version to ensure that it meets the requirements.
- 5. Re-Baselining:** After successful implementation and validation, the modified version of the software item becomes the new baseline. The previous version is archived for reference, ensuring traceability.
- 6. Status Reporting and Auditing:** The changes are recorded and documented for future audits. Configuration status accounting ensures all stakeholders are informed of the updated baseline.

Outcomes: CO2–Describe software planning and management.

Conclusion:

The Software Change Management process is critical to maintaining the integrity of software products by ensuring that any modifications are justified, controlled, and executed systematically. Through structured formats like Software Change Request (SCR) and Software Change Report (SCP), teams can handle changes efficiently, assess their impact, and re-establish baselines effectively. This ensures alignment with project goals, reduces risks, and improves the overall quality of the product.

Grade: AA / AB / BB / BC / CC / CD / DD

Signature of faculty in-charge with date

References:

Books:

1. Roger S. Pressman, Software Engineering: A practitioners Approach, 7th Edition, McGraw Hill, 2010.
 2. Ian Somerville, Software Engineering, 9th edition, Addison Wesley, 2011.
 3. John M. Nicholas, "Project Management for Business and Technology", 2nd edition, Pearson Education
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