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Engineering Change Management System

Distributed Systems Project Proposal

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Author’s declaration of originality

I hereby certify that I am the sole author of this work. All the used materials, references to the literature and the work of others have been referred to. This work has not been presented for examination anywhere else.

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1 Introduction

This work is the project proposal document of the individual work in subject ICD0021 Building Distributed Systems.

The document contains the problem description and ERD schema. It also features proposed main client flows.

2 Problem Description

The company the author is currently working in is using Excel to manage engineering changes. Although the Excel template has been somewhat improved over the last couple of years, the use of Excel has some limitations, that cannot be addressed.

2.1 Description of the current System/Process

Engineering changes can be initiated either by the client or internally.

The change can affect multiple items (end products, sub-products or materials).

The changes are either related to bill of materials or the process (routing).

A change generally consists of multiple activities, that need to be performed by different people. Some activities are dependent of each other and can only be performed in specific order.

An activity is described as a checklist point, where the status of the activity needs to be reported (mostly reported as open / ongoing / closed).

Some activities can be the same across the changes. An activity can be connected to multiple changes.

2.2 Issues with the Current System/Process

Going through the activities a person should do is slow as there's a master Excel that the person needs to filter first and then must go through each individual change (each a separate Excel file) that is in the open or ongoing status and check the individual activities.

Activities cannot be connected to multiple changes which means there are sometimes duplicated activities across changes.

Most of the activities are related to information (and changing of that information) in the ERP system, but the systems are not connected and thus some information is manually searched and input to the Excel files.

Information about the change doesn't sometimes reach all the necessary people as the change notice is sent out via e-mail and depends on the sender to include all the necessary people.

2.3 Expectations for the New System

The new system should allow a person to easily view all open and ongoing activities he/she has.

There should be an overview on an item level (all changes and activities related to that item) and on a change level (all items and activities related to that change).

There should be no duplicated activities. System should check if an activity already exists.

Connection to the ERP system (for sure) and automatic notifications would be nice-to-have but most likely are out of the scope of this project.

3 Main Client Flows

The main client flows are:

- Engineer inserts a new change by adding all the necessary activities and items.
- Person (component engineer, purchaser, planner etc) that needs to perform activities opens and views his/her activities and marks the status for the activity.
- Engineer or account manager reviews the status of a change.

The first two flows are shown on Pictures 1 to 3 on a basic level.

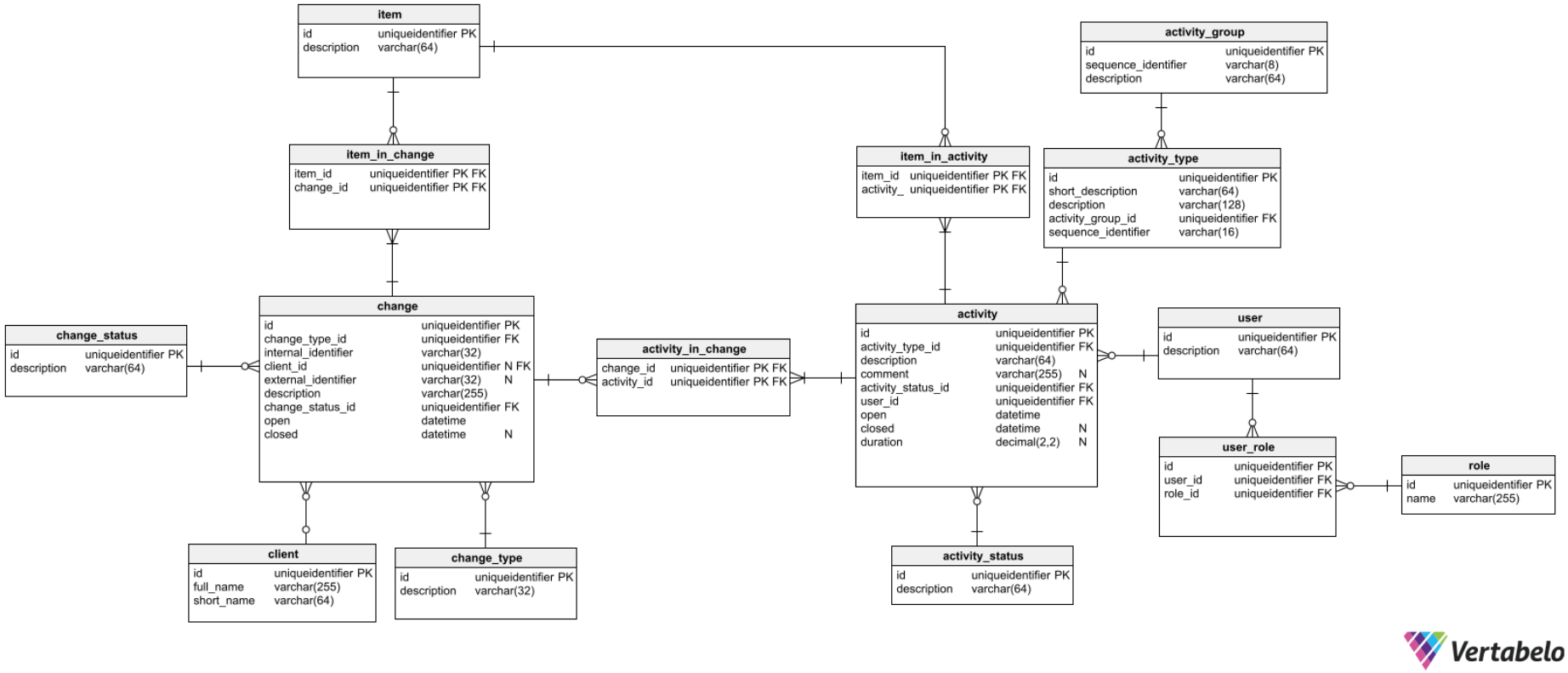
References

Graph 1. ERD Schema

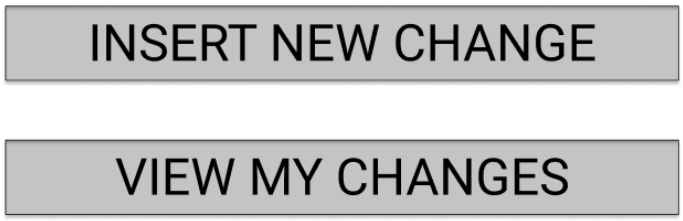
Picture 1. Initial screen for engineer after logging in

Picture 2. Engineer inserts new change

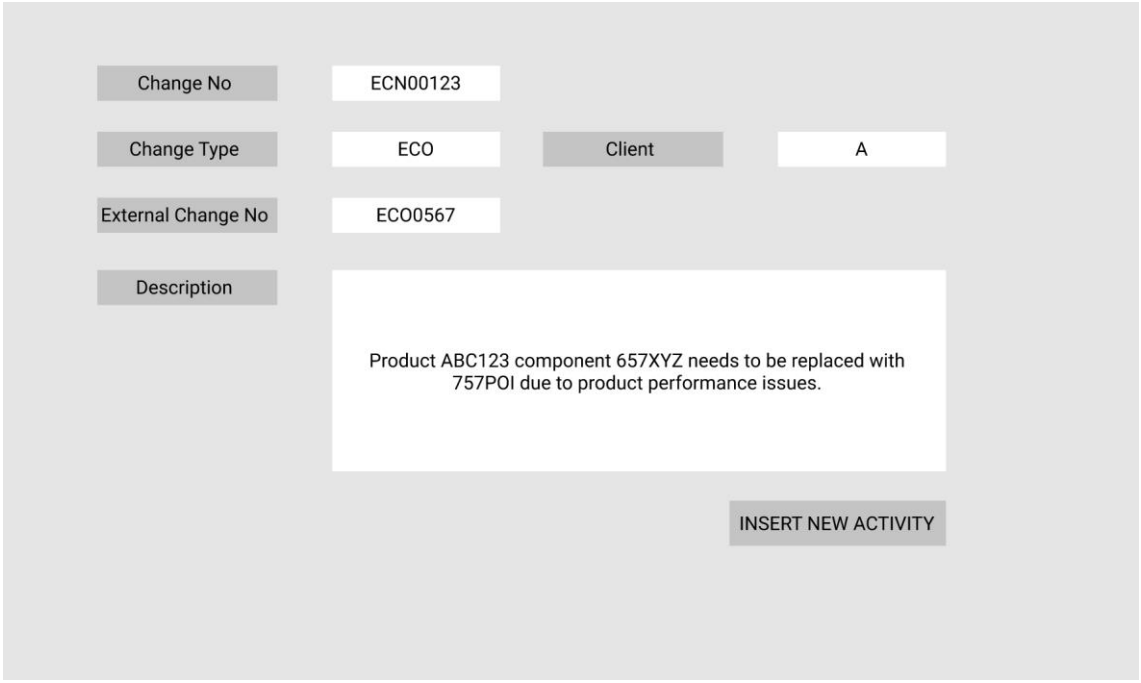
Picture 3. Purchaser views his/her activities



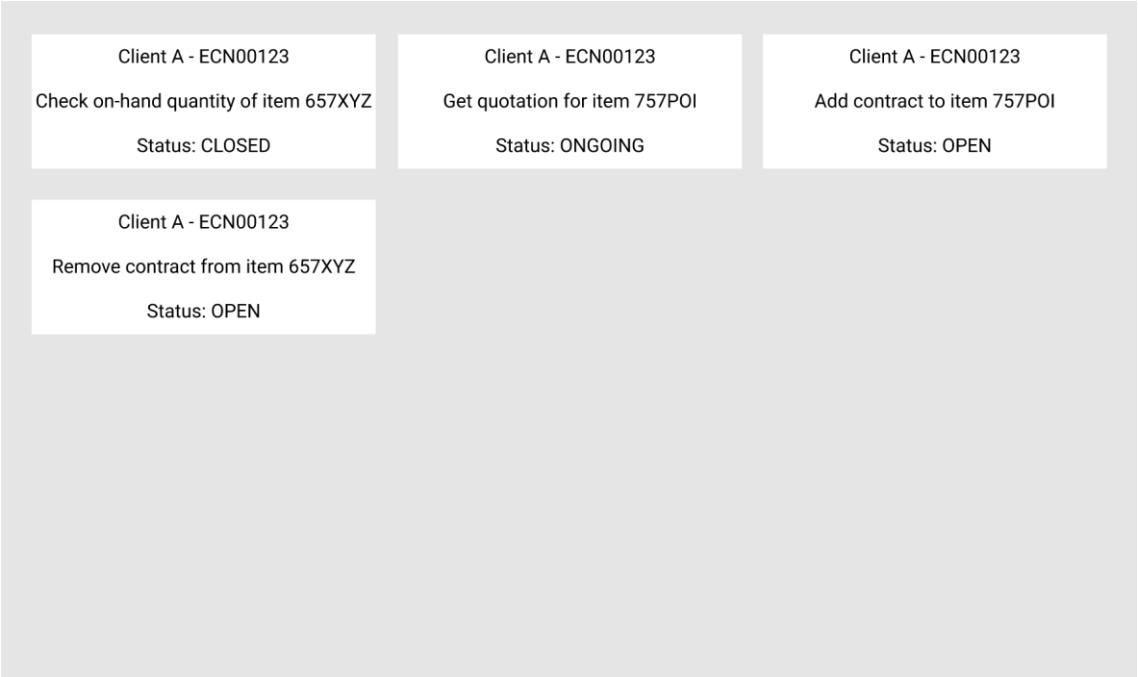
Graph 1. ERD Schema



Picture 1. Initial screen for engineer after logging in



Picture 2. Engineer inserts new change



Picture 3. Purchaser views his/her activities