Construction Management Solution – Constructing the Digital Asset

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**AVEVA’s Solution**

**Key Concept #1 – Work Packaging**

- **Project Planning at Highest Level**
  - **Construction Work Packages (CWP)**
    - Work Scope and Budget
    - Material, Documents, Drawings, etc.
    - Schedule
    - Responsible, Crew, Trade, Contractor, etc.

- **Workface Planning at Lower Level**
  - **Installation Work Packages (IWP)**
    - IWP Report
      - Detailed and discrete work scope and budget
      - Specific required material and related documents
      - Schedule and sequence
      - Responsible crew, etc.
AVEVA’s Solution

Key Concept #2 – 4D Planning

- Integrating the schedule with the 3D model
  - Simulate construction sequence to verify correct planning
  - Visualize installation and completion status by color-coding objects in 3D model
AVEVA’s Solution

Key Concept #3 – Integrated with Materials Management

• Visualize material and resource availability
  – Proactively expedite material or modify schedule to accommodate material shortages
AVEVA’s Solution

Key Concept #4 – Visualization

IF YOU HIT THIS SIGN, YOU WILL HIT THAT BRIDGE
Construction Management – System Architecture

AVEVA-Construction Management

AVEVA-Digital Information Hub

Gateway Gateway Gateway Gateway
High level flow example
High level flow example
High level flow example

- Dashboards
- Planning
- Construction
- Material

Integration with:
- E3D
- Documentum
- Primavera
- SAP

Installation Work Package
Importing 3D-Models and 3D-Items
Digital Asset Import Setup

Project Information Hub

Initial Setup for pulling into Hub
3D Model & Items Import

Import 3D Models brings in the geometry of all the models (no tag information is imported at this time).

Import 3D Models Items brings in the tag information.
3D Material Assignment
3D Material Assignment

Work Package Kitting allows the user to use the model to associate material to highlighted work package, and subsequently further breakdown with construction planning.
3D Material Assignment

Within the job kitting the system identifies all activity properties.

Green & Red Buttons can be used to promote or demote the selection of items to and from the work packages.

On the Left a Multi level Bill of Materials

On the Right a flat Bill of Materials

3D model
Importing DIH Documents
Import – DIH Documents

A List of Pulled documents can be seen in s70010 Documents

Documents can be pulled in when and as the user desires
Documents

When you select an associated document, it can be opened in your default browser and navigate to that document. Then display it using the built in viewer.

Documents can be associated to work packages & jobs they are needed for.

Lines of Data can be created, New, Delete and Save.
Attachments

Attachments are means of pulling in documents from a network and viewing, amending them and saving.

Lines of Data can be created, new, delete and saved.

View opens the document.

Edit opens the document for editing.

Save
- Save As
- Upload To
- Create Copy of Link

Create Revisions
- Create New Revision
- Release Revision
- Toggle Attachment Status

Filter
- Show Latest Revisions
- Show Latest Released Revisions
- Show Revision History
Construction Management Material Module
Drawings can be created, deleted, and saved.

Lines of Data can be associated to the jobs they are needed for.

If those Drawings are used in Design Gantt View, then the system will identify if the drawing is critical from the End of the Design Gantt View finish date to the Planned Usage date.

Drawing is critical:
Work drawing is not planned to be available before finish of activity.
Material Procurement

Detailed information on the material status is available by using the purchase information button.
Material Stock Holding

Detailed information on the material stock holding is available by using the stock button.
Material Critical

Within the Gant Chart there is a Material status column. This identifies the overall Material Status. On a Traffic light, drill down to the individual material is possible, to get detailed information on why an activity is material critical.
Stages & Types of Work
Stages & Types of Work

Stage 1
Assemble Tubing

Stage 2
Machine Flanges

Stage 3
Assemble Spool

Stage 4
Install Spool

Stage 5
Inspect System

Stages and Work Types are means of following the material through its life cycle within planning.
Within Work Stages Types users can define different types of work, that can be later associated with material.

They can also attach a colour that, so as to colourise the 3D model to demonstrate the state of the model at that time.
Stages of Work

Within Stages of Work users can setup generic routes. Once the user has setup a Stage of Work, they can then setup the generic route by adding new a Work Type. A sequence of Work Types can then be defined as a % of the overall Product Code Norm value. So if the Product code is 170 hours for Pipe spool then cut will receive 5% of the Norm = 8.5 hours.

Note to Presenter this screen will need to be updated with the addition of resources.
Within Stages of Work, users can define the Class Ids, this will have the function that all the Class items within the 3D Model and Items session, will automatically get that work Stages.
Timeline Simulation allows the user to simulate the construction of the 3D model using the items attached to the Project as the time rolls on. Items appear with a reference point on the schedule. Note: This facility works within both levels of the Plan.
3D Timeline Simulation

- User can set the speed at which the timeline simulation runs.
- Select specific Time on the Simulation relates to the timeline of the schedule.
- Status Colours can be used to define the Cad items in its material cycle.
- With Auto zoom.
3D Model allows the user to navigate around the model from within the plan. Making general enquiries i.e. location, size, etc.

Note: This Facility also works within the detailed plan.
User can set the visibility level of the surrounding structure. This introduces the rest of the model.
Thank you