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Getting ready for the Future

Piloting PCS neo

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- **Title: Getting Ready for the Future - Piloting the Siemens PCS neo**
- **Track: Best Practices and Novel Approaches**
- **Presenter: Karen Pigler, Cassie Kottcamp**
- **Company: Pigler Automation, LLC**
- **Session # (for your survey): 6.6**

Providing Excellence in Process Automation

PIGLER AUTOMATION, LLC

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- Pigler Automation, LLC is a Siemens Solution Partner in Longmont, Co
- We are PCS 7 certified, involved with and utilizing PCS 7 since 1996
- 15 employees and growing
- 90+ % of our business involves the Siemens PCS 7 product spectrum
- Industries served: Power, Industrial Gases, Oil and Gas

The Presenters

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Karen Pigler

CEO of Pigler Automation, LLC

- 30+ years of Process Control Experience
- 20+ years of PCS 7 Experience
- Long-standing Member of the PCS 7 Product Council
- Involved in the specification for Logic Matrix
- Pilot tester for Logic Matrix and Simit

Cassie Kottcamp

Lead Engineer with Pigler Automation, LLC

- PCS 7 Experience:
  - APL Library
  - Building CMTs
  - PAA
  - Simit
- Cassie was the project lead engineer on the actual PCS 7 project that serves as basis for our PCS neo Pilot

A new Process Control System

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- How do we get ready for the future?
  - Functionality
    - Are all features that we currently use and some that we always wanted included?
    - What kind of project can start using the new Product?
  - Engineering
    - What is the impact on our engineering processes?
  - Training
    - How do we prepare our engineering team?
  - Taking care of our Customers
    - How can we make sure current projects using PCS 7 can possibly be upgraded?

Becoming a Pilot User

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- In 2018 Pigler Automation executed several small PCS 7 projects for a similar application
  - Standard APL / CMT based
  - PAA used to create project
  - Simit model from FAT available

- Similar projects are expected that are potentially a great candidate as early adopter for the new process control system.

- During the User Summit 2018 in Fl initial discussions about Piloting a small application as a representative for the US – Market
- Winter 2018/2019 contract negotiation and initial training. Pilot activities since early 2019

The Job of a Pilot User

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- Pilot User will work with pre-release versions, sometime right out of development
- The goal is to learn and apply the SIMATIC PCS neo workflows and provide feedback
- Another goal is to test usability from an engineering standpoint

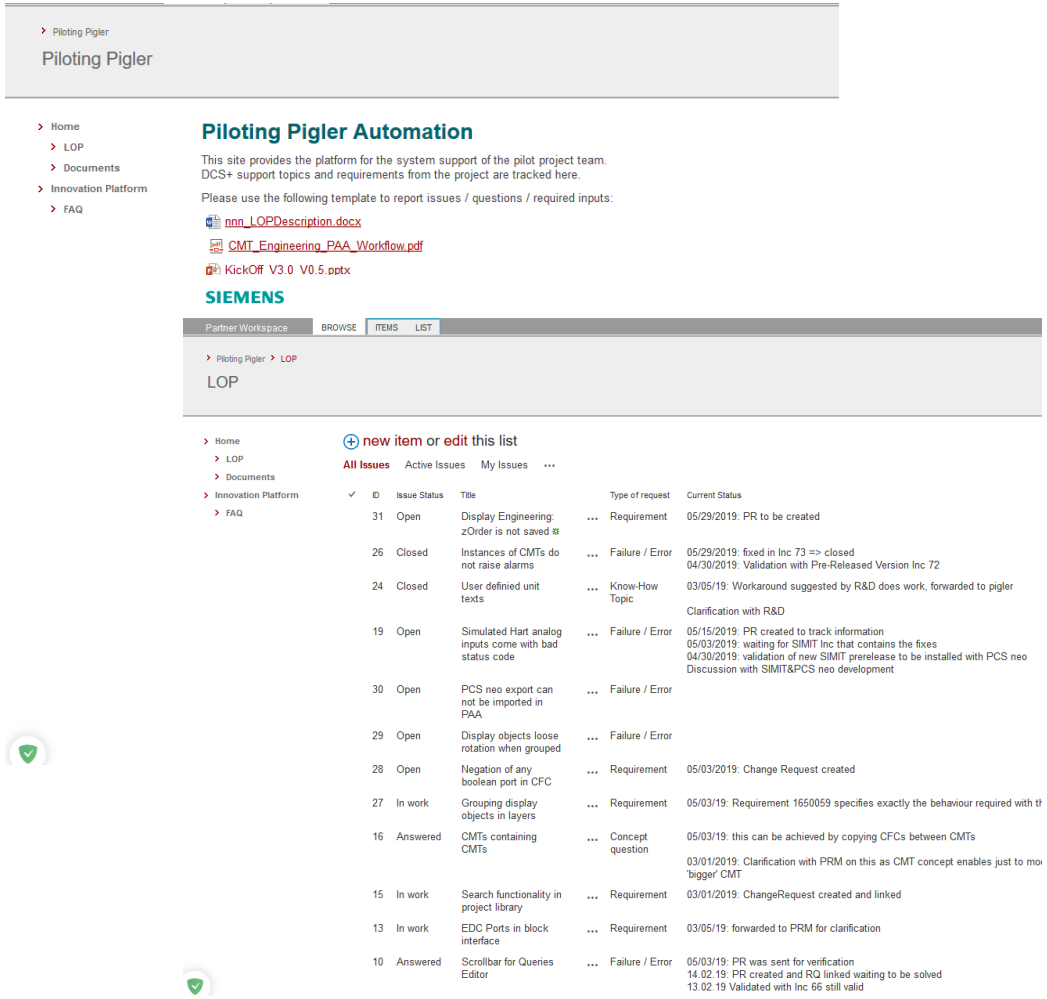
- Great collaboration between Siemens and Pigler Automation
- Siemens appreciate outside feedback regarding usability and functions
- Several findings and suggestions are already addressed in current increments

Pilot Environment

- SharePoint access to
  - Training Videos
  - Power Points and other training material
  - LOP

- Pilot Contacts:
  - Doug Ortiz
  - Matthias Schindler

Thank you for all your help!!!!!



Pilot Environment
Project Scope

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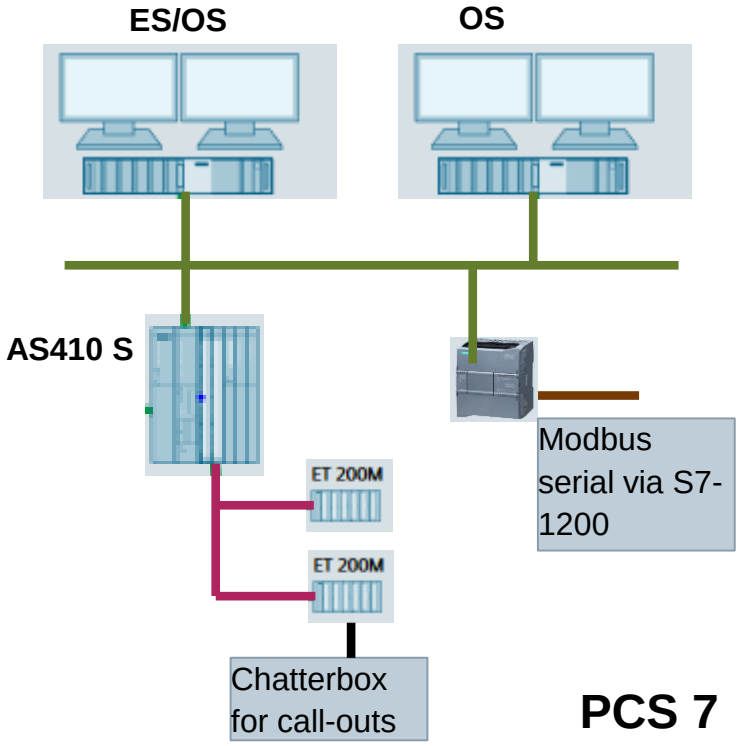
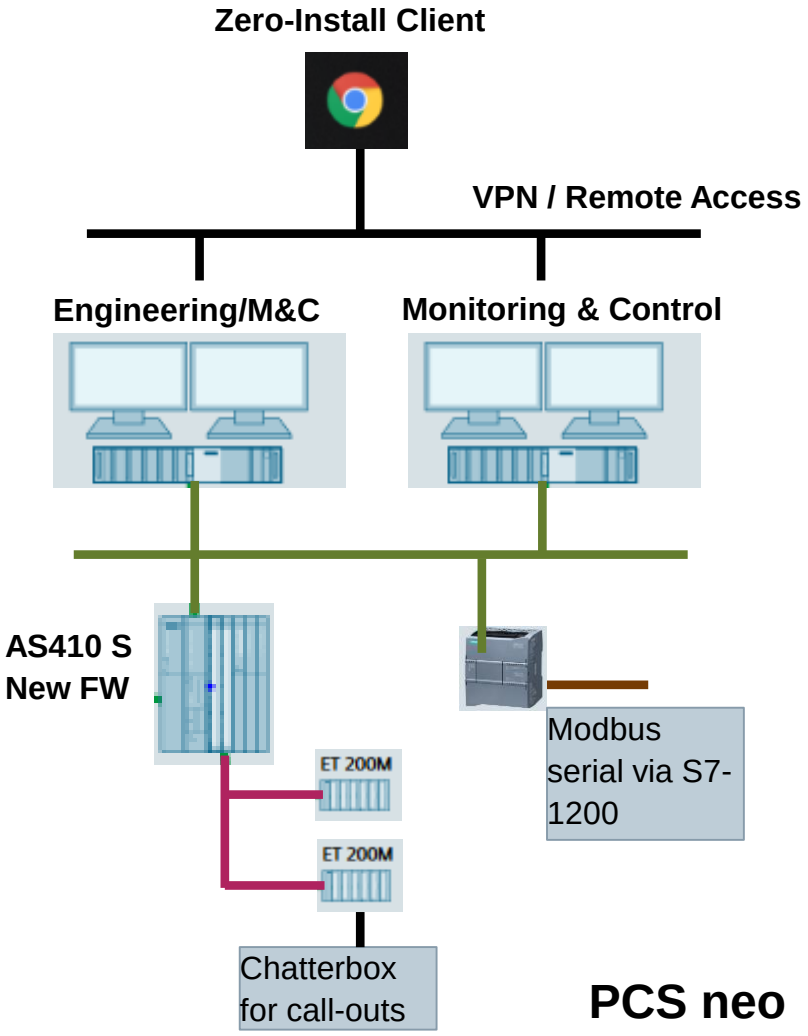


PCS 7



PCS neo

Pilot Environment

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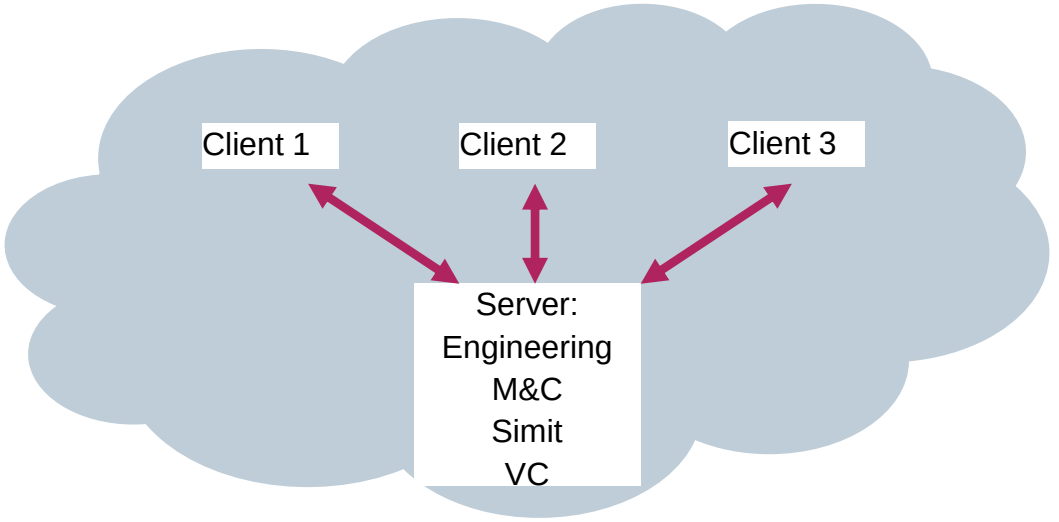
- Access 100% Cloud-based, AWS in Germany
- Up to 4 users can work at the same time
- Simit & VC included in Engineering/M&C Server
- Any HMTL5 browser can be a client (we used Chrome), zero-install clients
- Installation/Administration handled by Siemens
- Multiple Increments, all pre-release
- Restrictions
  - Single Monitor access to cloud based infrastructure
  - File upload/download only possible via Siemens



Note: Cloud based infrastructure use will not be part of the first release for PCS neo

Functionality of pre-release piloting software versions

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Functional Requirements fulfilled/ new and improved Features
HW – could use all hardware from PCS 7 project
APL – all APL functions are included
CMTs – could rebuild CMTs as needed
Simit – could use Simit model
New Multi-User concept – works much better than PCS 7
Block Icons and faceplates for APL – improved, i.e. Note feature, selection of different graphical representation on block icon
Library Type Editor for graphical/faceplate adaptions
Spreadsheet Engineering – very powerful tool with user queries
Excellent Version Tracking, Recovery Points

Functionality of pre-release piloting software versions

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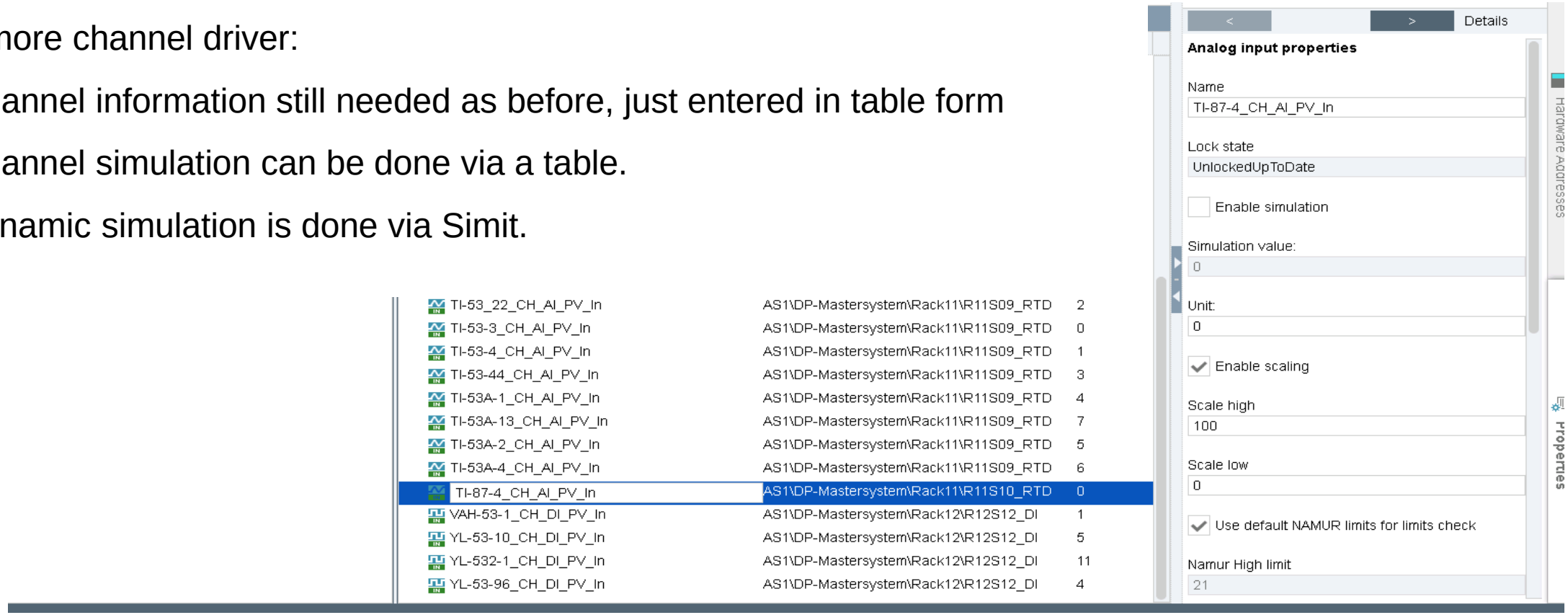
Needs improvement/not available
Custom Function Block – not possible in current increment
XY-Trend and Online Trend – not available in increment available to us but already implemented (engineered trends and faceplate trends exist)
HMI symbols and features – limited in current increment

Differences based on new PCS neo concepts
Logical function per chart – only one page in current increment, hurts readability
Chart in Chart no longer exists – hurt readability of logic

Functionality – Ability for late hardware binding

- Can be very helpful for OEMs and other standard application, since HW can change from project to project, while charts can stay the same.
- No more channel driver:
  - Channel information still needed as before, just entered in table form
  - Channel simulation can be done via a table.
  - Dynamic simulation is done via Simit.



Engineering process used in the pilot
(PAA not a mandatory part)

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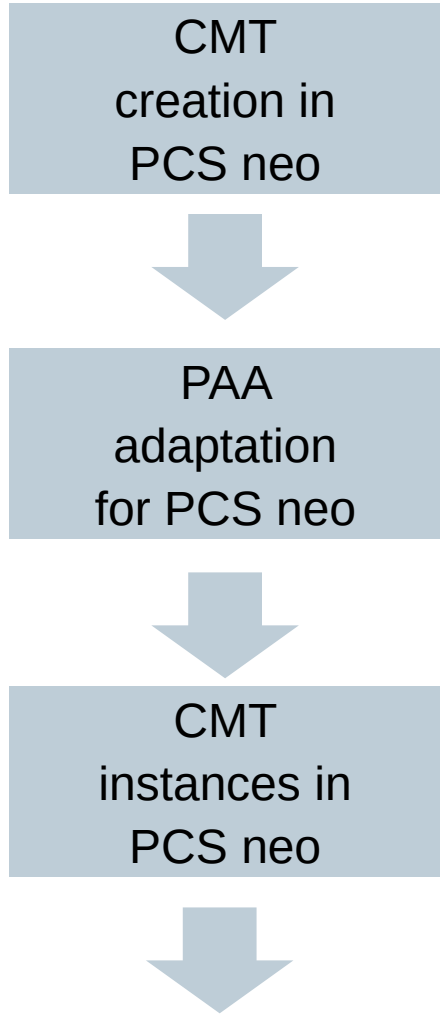
- Step 1: Re-create CMTs in PCS neo
  - New Template Management Tool
  - Assignment of signal and parameter, as well as variants is different from PCS 7
  - Because a chart has only one page, multiple charts are needed for complex CMTs
  - No run sequence pre-sets
- Step 2: PAA adaptation in PAA (current commercially available version)
  - Due to “no channel driver” concept, interfaces need re-work in PAA
  - Signal adaptation needed for different naming rules (reported to development and fixed today)
- Step 3: Import into PCS neo based on PAA export XML (same function as PCS 7)
  - Supported by Matthias Schindler



PAA import into PCS neo (current increment)

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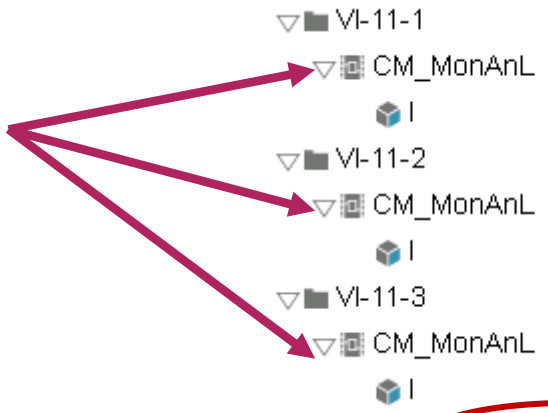
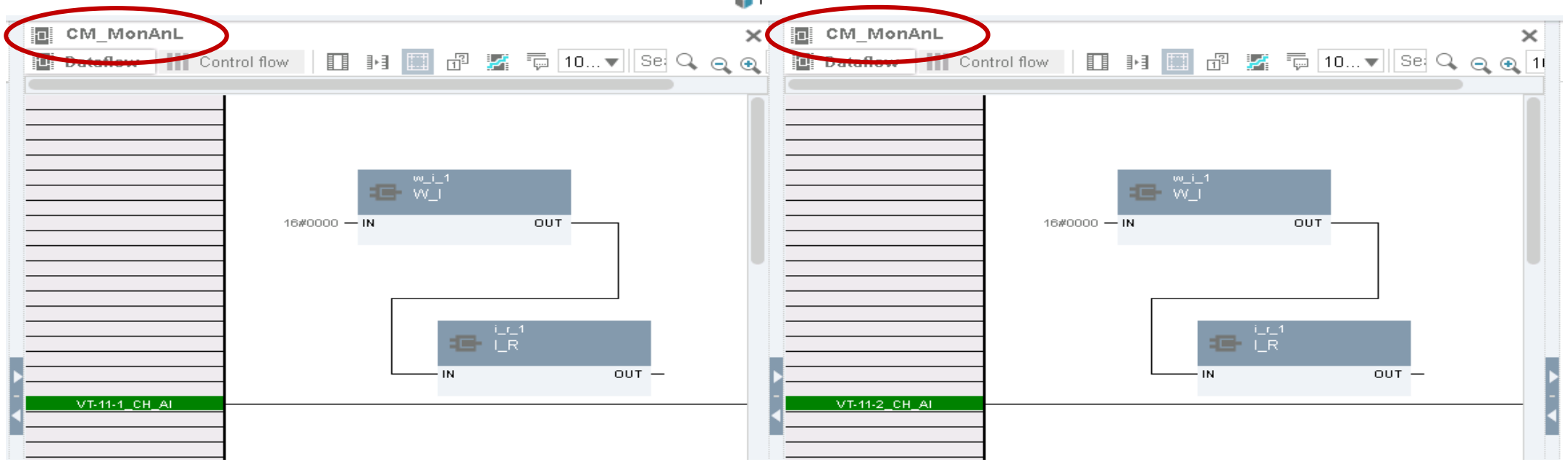
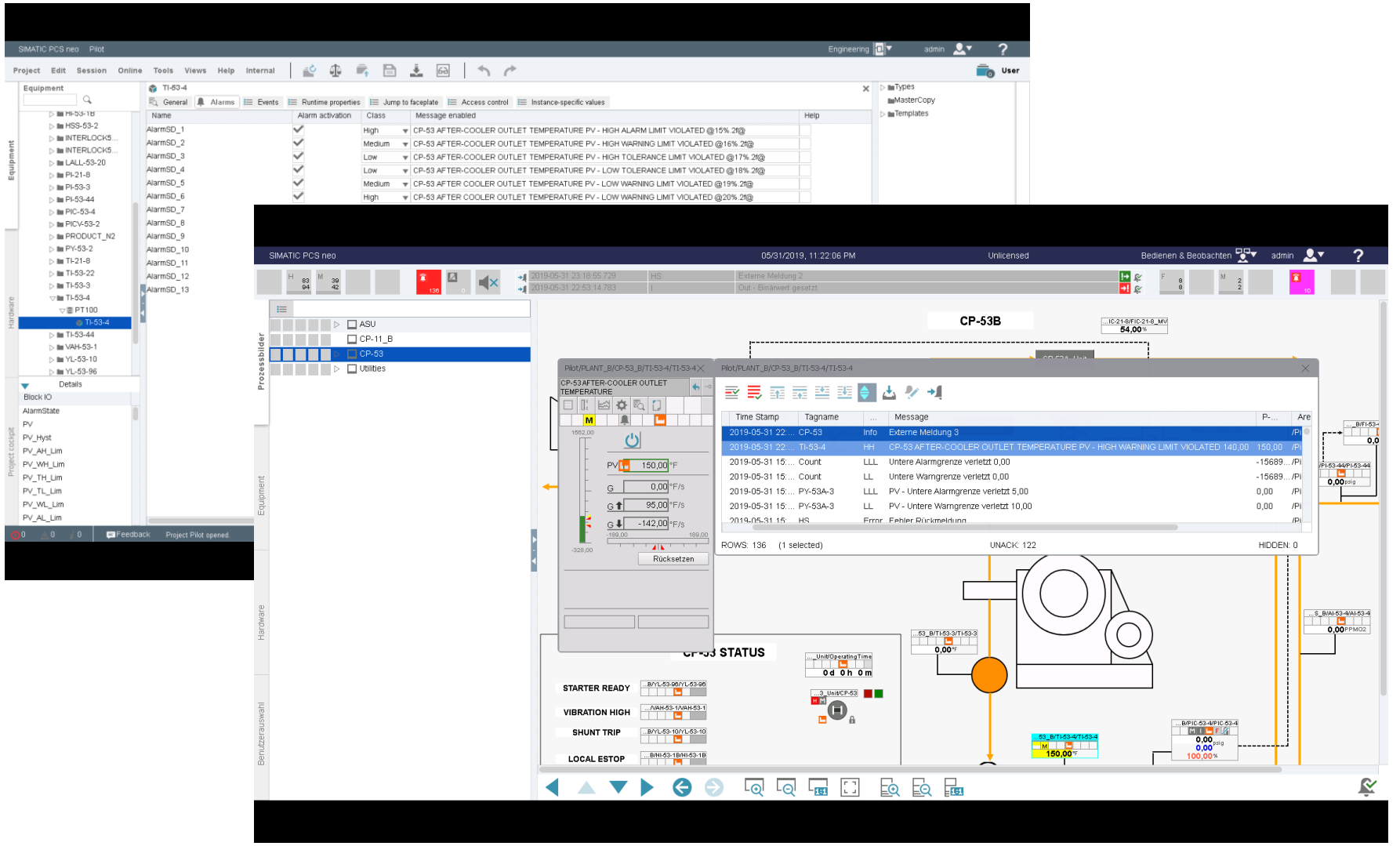
Chart names are not unique – recommendation to add folder name to the chart for better readability



Remedy:
Use EXCEL add-in for PCS neo to facilitate bulk changes of engineering data



Message texts

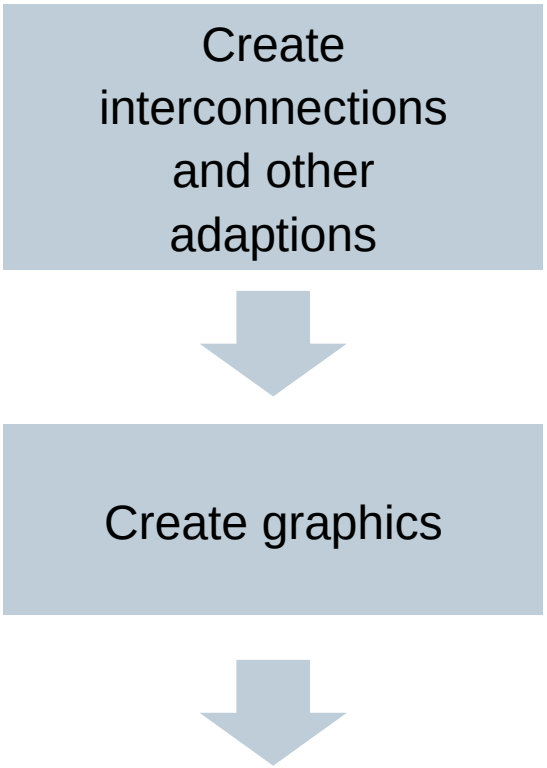


- Manual entry of block comments in alarm text
- Alarm message displays the setpoint of alarm as well as current value

Engineering process

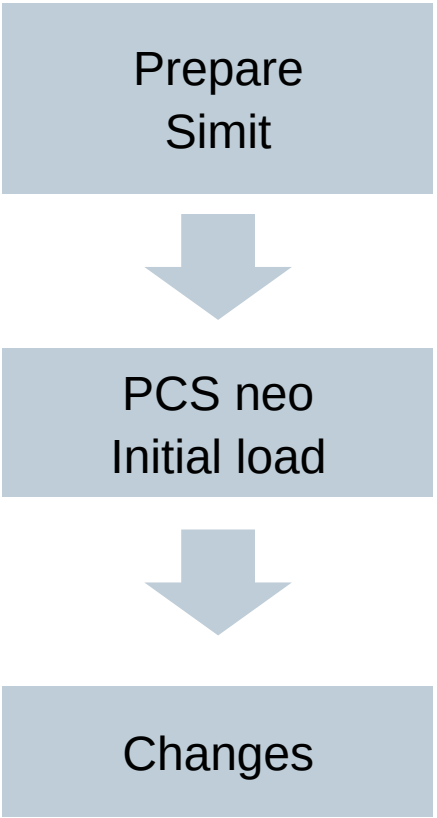
- Step 4: Create interconnections between CMTs
  - Chart connections are harder to make than in CFC in current increment if only single monitor is available
  - Spreadsheet engineering helpful

- Step 5: Create graphics
  - No OS Compile anymore to make tags available to M&C
  - HMI engineering more time consuming:
    - Lots of edits to objects in current increment
    - Static graphic are very hard to manipulate in current increment



Engineering process

- Step 6: Prepare Simit
  - Simit and VC fully integrated in Engineering
- Step7: Initial Compile and Download
  - Hardware specific full downloads (VC, M&C)
- Step 8: Engineering Changes
  - Publish changes with one click
  - Excellent version tracking
  - Compile and download to impacted devices in one step



Lots of Engineering process improvements, but current increment needs usability enhancements

Training

- PCS 7 engineers need very little time to learn new tools
- TIA Portal and Simit know-how/experience helps
- APL functionality is exactly the same
- Need to understand CMT concept
- Better training support available i.e. Videos
- Presentations made available to us were very helpful
- In-product PCS neo documentation needs work

Reusing PCS7 Engineering Data for PCS neo

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Ideal World	Pre-release	Comment
Export Hardware configuration	Export from PAA source for Pilot could have been reused	PAA to be used as data hub
Export CFCs and SFCs to PCS neo	CMTs via PAA after removing channel driver, renaming signals, interconnection re-done	PAA to be used as data hub
Export PCS 7 OS to PCS neo M&C	New graphics from scratch	
Re-use Simit model	Simit needs very minor adaptations	
Reuse Hardware	No Problem for Pilot project, AS-410 and I/O modules released for neo	ET200M still supported AS-410 only controller to be used in PCS neo

Use today's innovations for tomorrow

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=> use APL and CMT now to help future projects

What's Next

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- Pre-release version still in development
- Pricing not yet announced
- In discussion with Product Management to identify first customer PCS neo project

- Pigler Automation will continue to use APL, CMTs, PAA and Simit for our projects

Getting Ready for the Future
- Piloting the Siemens PCS neo

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Thank you!