



CIM Industrial
Systems A/S

Morten Pedersen

Test Solutions Director



- B.Sc.E.E, Århus (1999)
- Telital R&D Denmark A/S (1999->2003)
 - HW and SW development off test systems to mobile phones
- CIM Industrial Systems A/S (2003→)
 - Project Design and Estimation
 - Project Management
 - Ressource Management
 - TestStand & LabVIEW certified



Agenda for presentation

- About CIM Industrial Systems A/S
- Improve development process
- Improve LabVIEW code quality
- LabVIEW Tools
- LabVIEW Design Patterns

Connecting Technologies

- Danish company specialized in computer and electronic engineering.
 - Test Solutions (23)
 - Software Solutions (7)
- Part of CIM Group (established in 1998)
- Strong foundation in test, measurement and validation systems based on NI products. Core competences:
 - System design
 - Software development
 - Project management



Connecting Technologies

- Technology KnowHouse
 - Engineering knowledge and experience
 - Insourcing -> Outsourcing (turnkey solutions)
 - FLEXSTAND Solutions (OI, Logger, Medico)
- Primary areas
 - Test Solutions
 - Green engineering (Wind power, Solar power and Fuel Cell, Pump control etc.)
 - Medico Solutions (GMP, CFR 21 Part 11)
 - Vision Solutions (test and industrial)



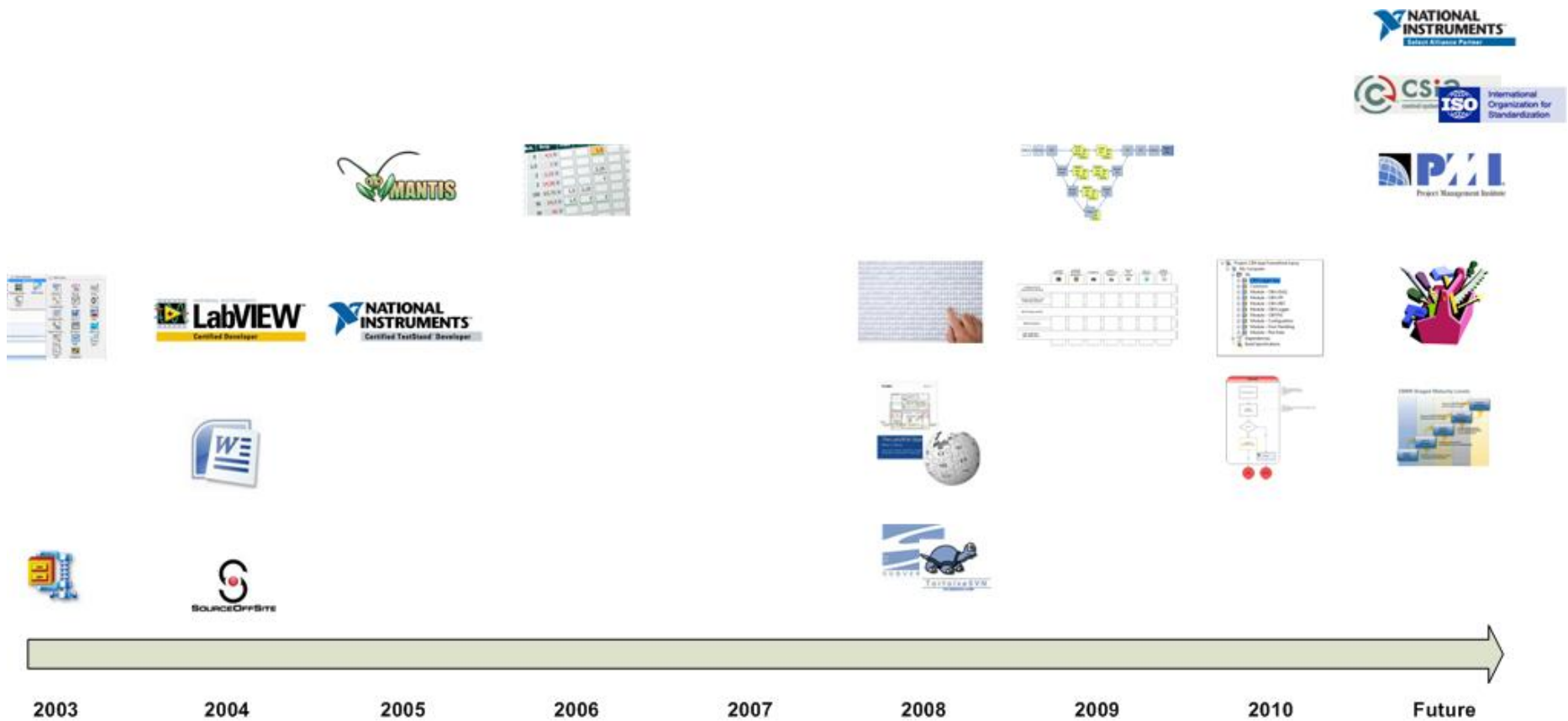
Our way to succes

**BE THE BEST IN SOFTWARE
DEVELOPMENT**

**BE THE BEST IN PROJECT
MANAGEMENT**



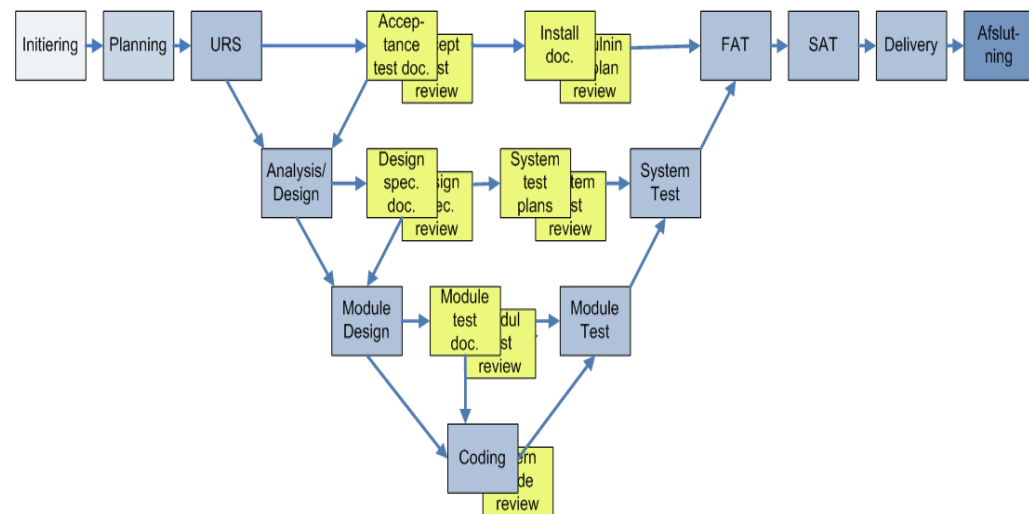
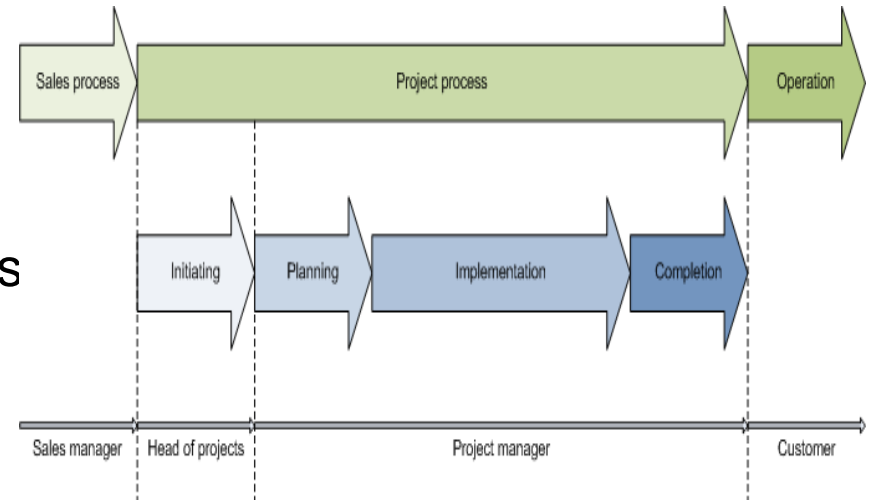
Progress in CIM



Process - CIM Project model



































CIM executes +180 projects last year (2010), so project execution is a very important issue

- Focus on project development process
 - Do it the right way
- Focus on project management
 - On time
 - On specifications
 - On price



Process - CIM Project model

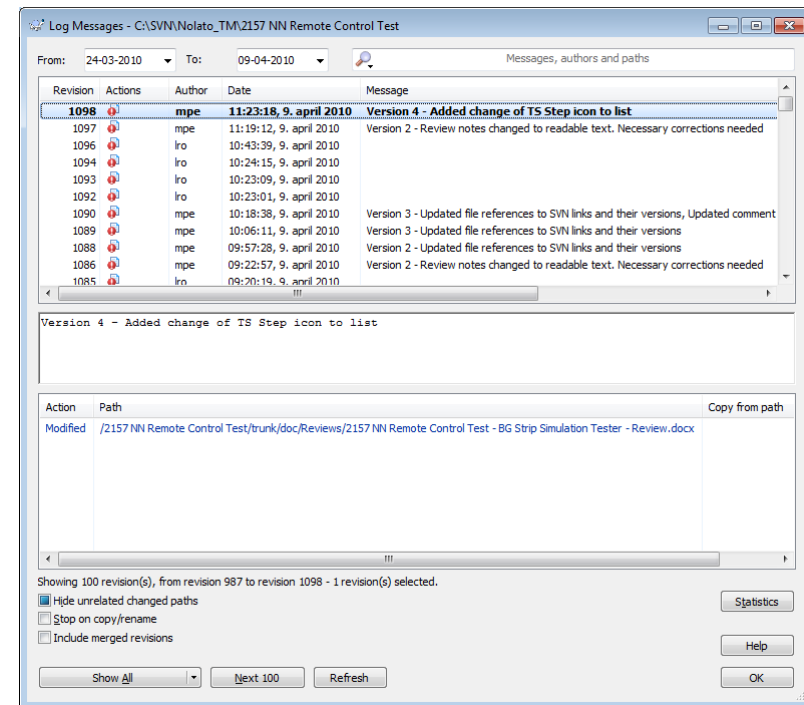
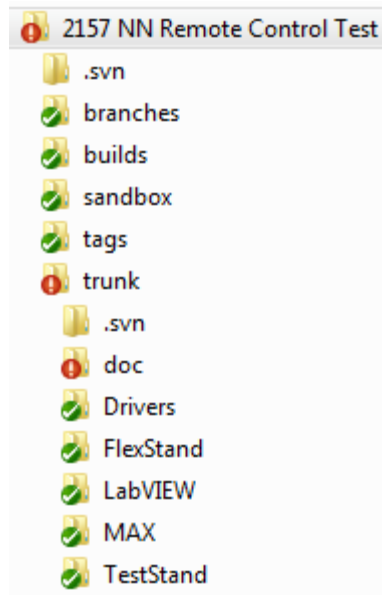


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-  CIM Accept Test Testsplan.dot
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-  CIM Agenda DK.dot
-  CIM Agenda UK Med Referat.dot
-  CIM Agenda UK.dot
-  CIM Bestilling og levering.xlt
-  CIM Design specifikation.dot
-  CIM Estimation - 3 Punkts.xlt
-  CIM Estimation - Simple.xlt
-  **CIM Fax forside.dot**
-  CIM Flersidet dokument.dot
-  CIM Kravspecifikation.dot
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-  CIM Projekt Dagbog.dot
-  CIM Projekt Evaluering.dot
-  CIM Projekt Overblik.dot
-  CIM Projekt Status Rapport.dot
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-  CIM Risiko Analyse.xlt
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-  CIM Tilbud - Fastpris Simple.dot
-  CIM Tilbud - Projekt ændringer.dot
-  CIM Tilbud - Timepris Simple.dot
-  CIM US UDCAST.dot
-  CIM Vision Design.dot

Process - Source Code Control



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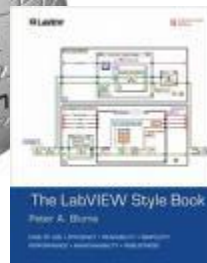
Quality - NI Certifications



Navn	CLAD	CLD	CLA	CTD	CTA
bdm	x	x	x		
bjl	x			x	
cbh	x				
hmo	-	x	x	x	
lro	x	x			
jca	x	x	x	x	
kmo	x				
kv	x	x			
mkn	-				
mlf	-	x			
mpe	-	x	x	x	
rl					
seo	x	x			
ssc	x	x	x	x	x
ssv	x	x	x		
uk	x	x		x	
vrv	-	x		x	

Quality - Code Standard in CIM

- A LabVIEW Standard Code in CIM Industrial Systems A/S is designed to ensure the quality of the LabVIEW code we develop to our customers. This should help providing a uniform code, which during development is a focus on efficiency, maintenance, uptime, scalability and more.



Quality - The Significance of Style

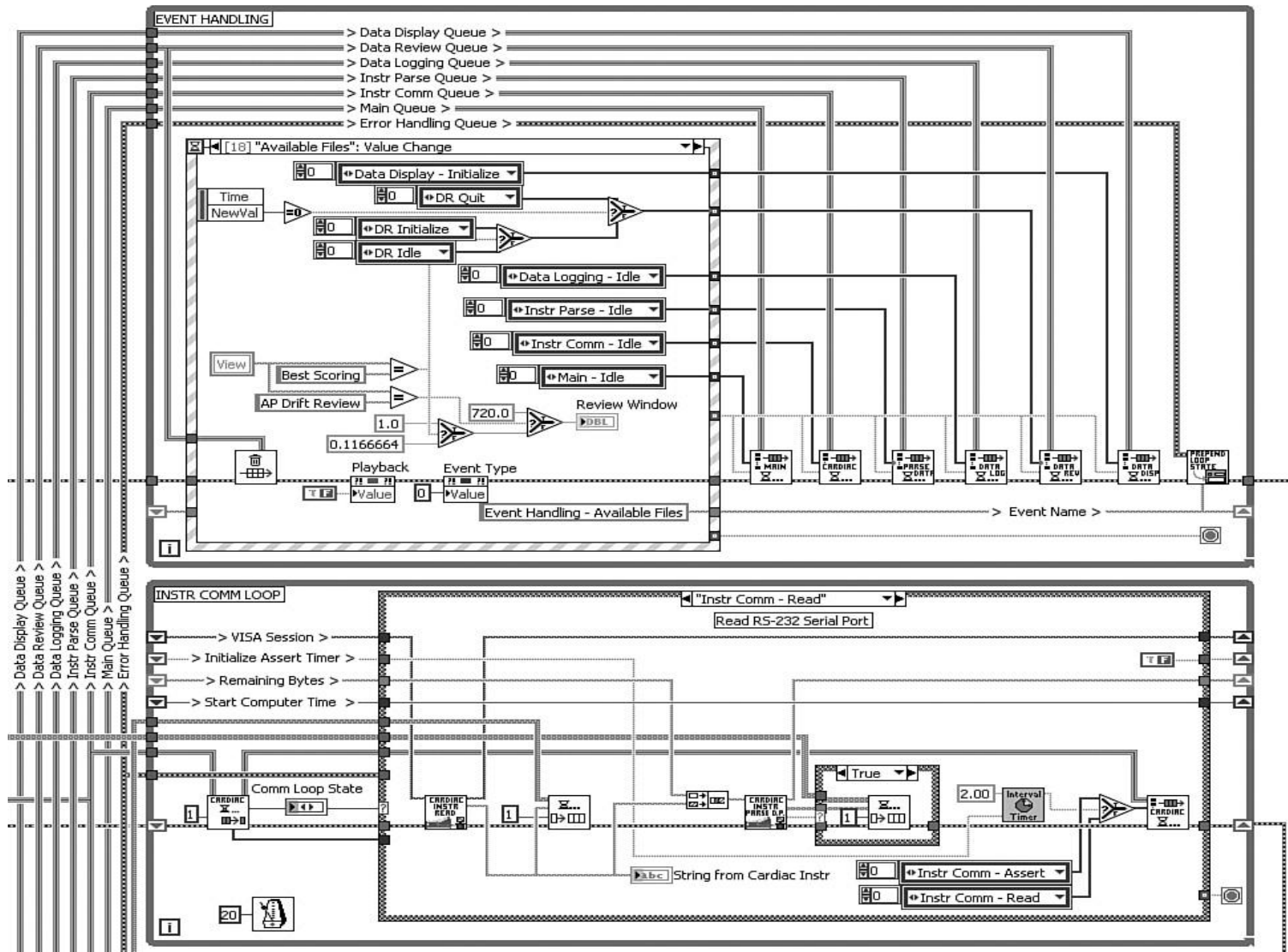
Theorem 1.1:

- A direct relationship exists between LabVIEW development style and the ease of use, efficiency, readability, maintainability, robustness, simplicity, and performance of the completed application.

Quality - Prepare for good style

- LabVIEW invites to start developing the application very fast. We begin in a known area and see how it ends...
- Missing specifications increase the risk for developing applications and/or functionality that doesn't work properly

Quality - Code Standard - Why



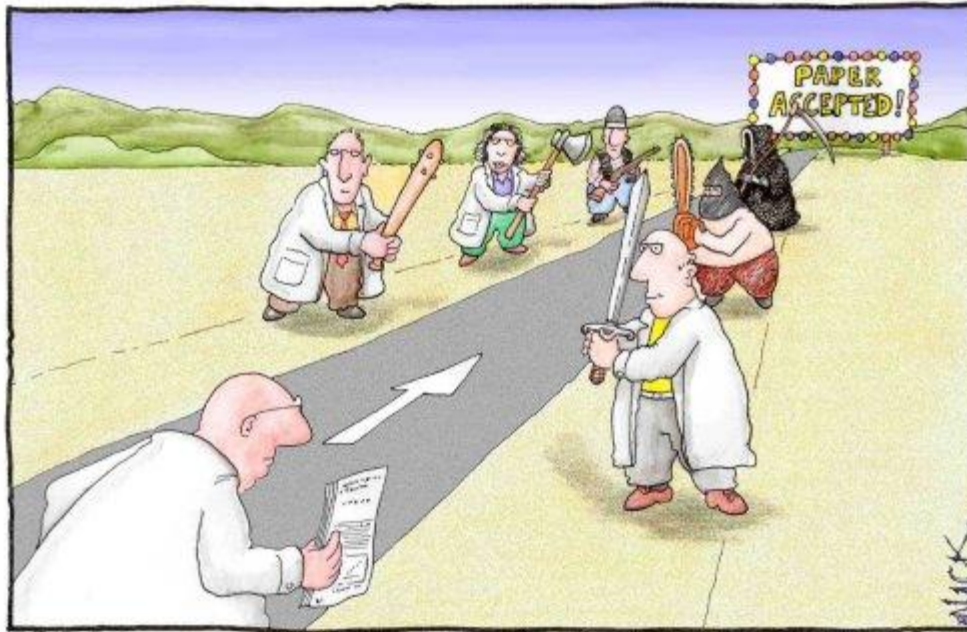
Quality - Code reviews



- Code reviews are systematic methods of reviewing source code quality, utilizing one or more independent perspectives or reference points.
- Identifying problems.
- Exchanging knowledge and ideas that improve developer skill level.
- Promoting and evolving standards across an organization.
- Most importantly, code reviews help ensure high quality software that is readable, maintainable, and robust.

Quality - Code Review

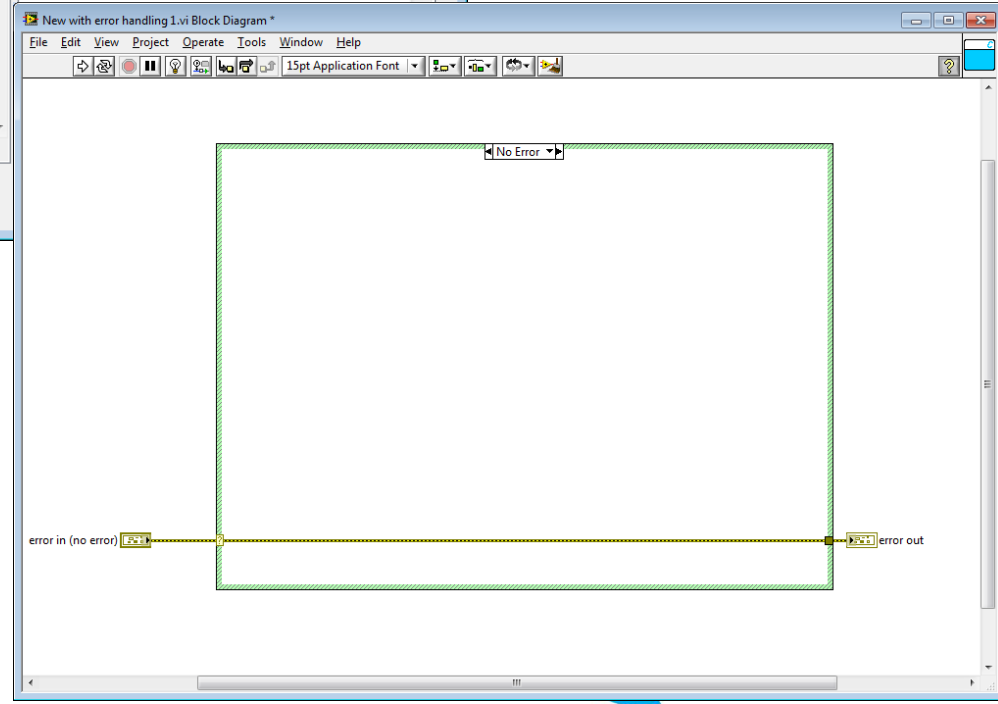
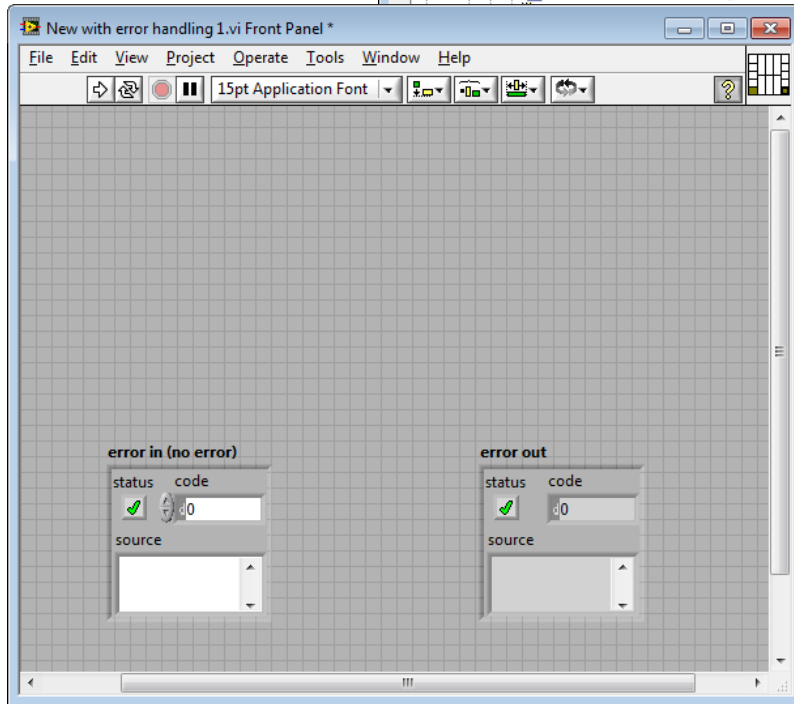
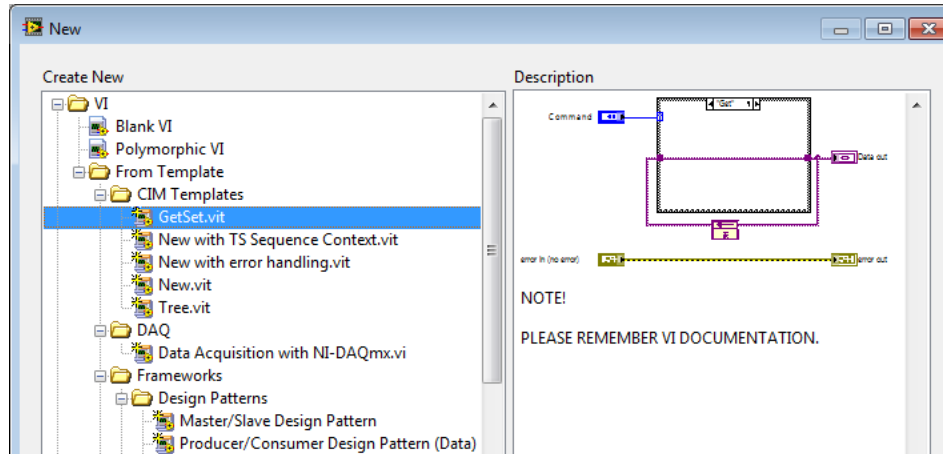
- The impact of code review is often underestimated. It is a dialogue between the author and the reviewer, where it is not just about finding errors, but also about improving the code and the process. It is a picture of how we can run our code review process and close it in a way that is beneficial to the project.



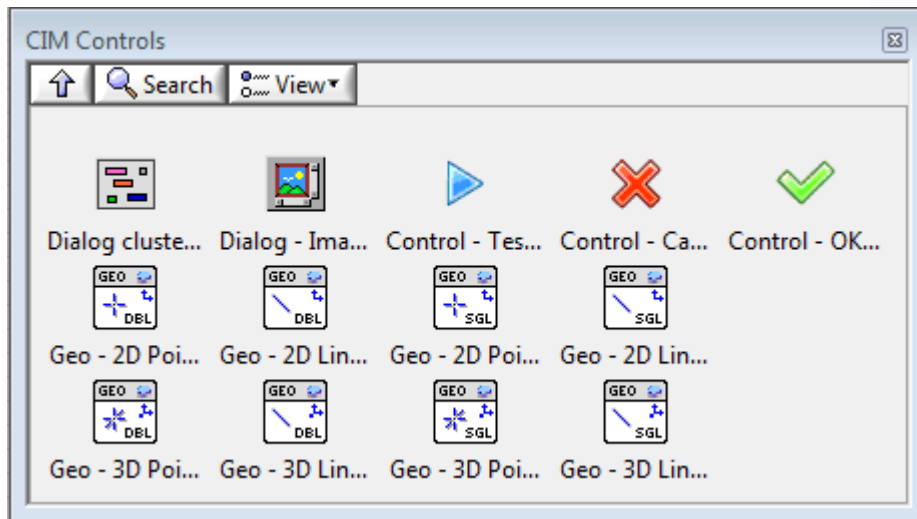
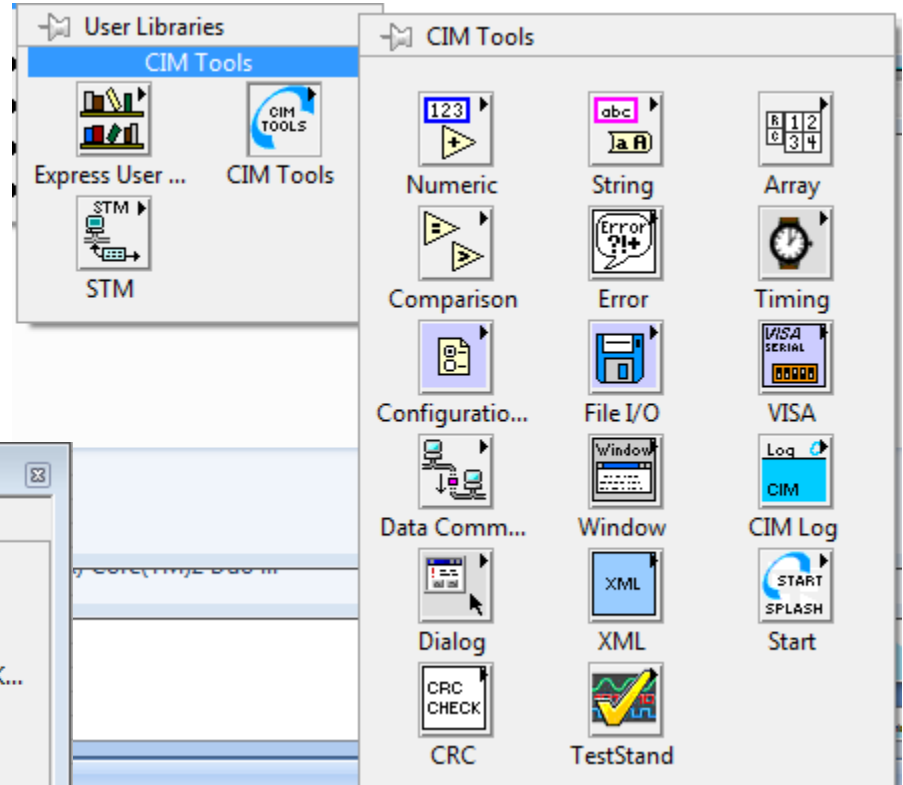
Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

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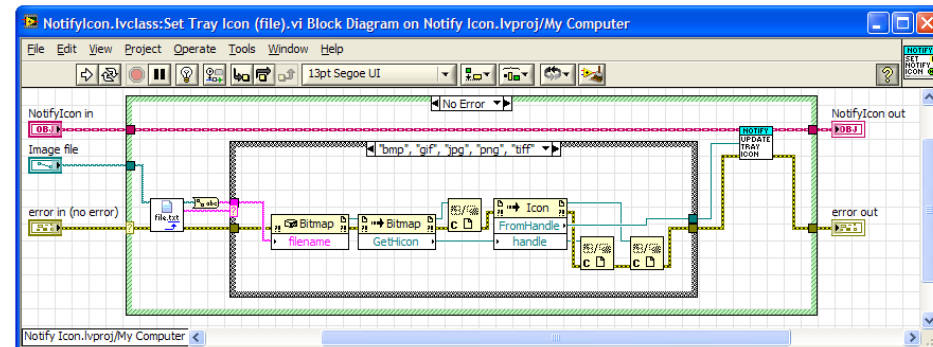
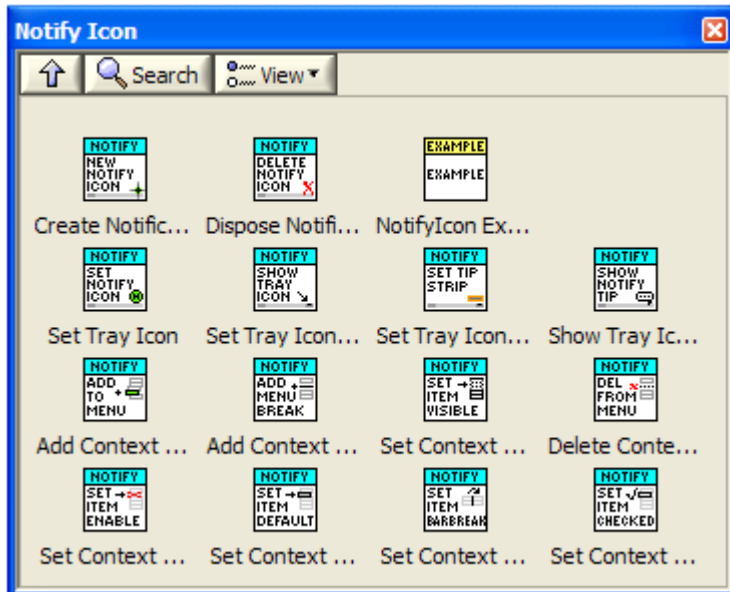
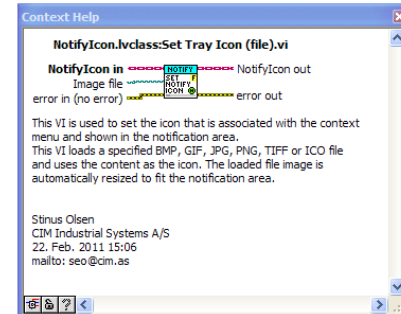
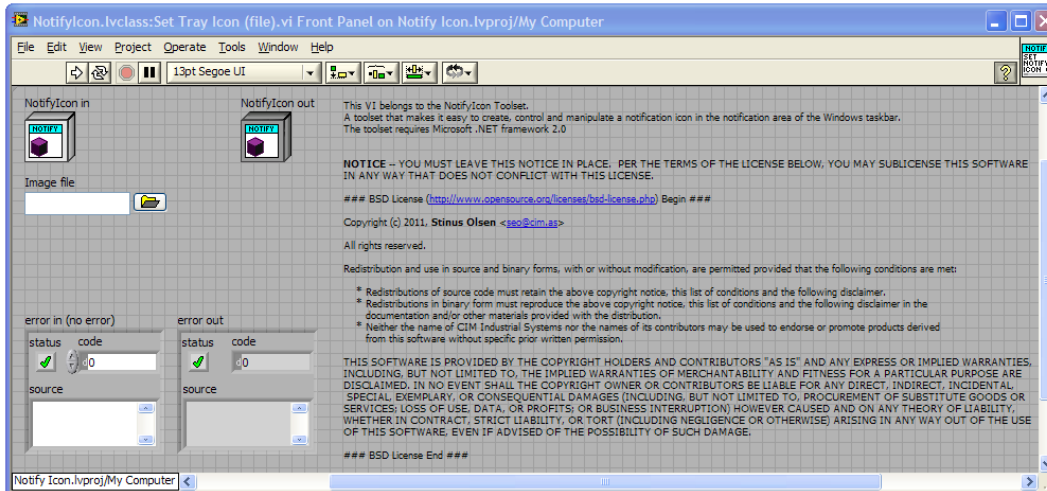
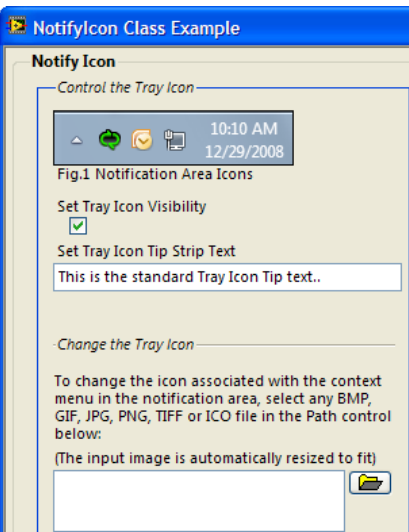
Tools - CIM LabVIEW Templates



Tools - CIM LabVIEW Tools

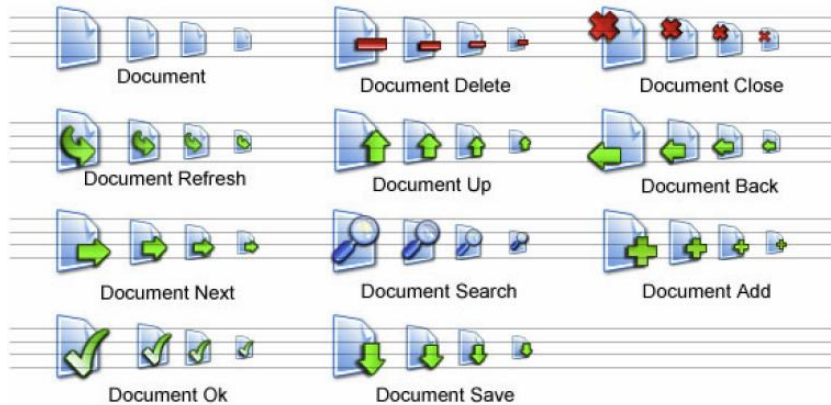


Tools - CIM LabVIEW NotifyIcon

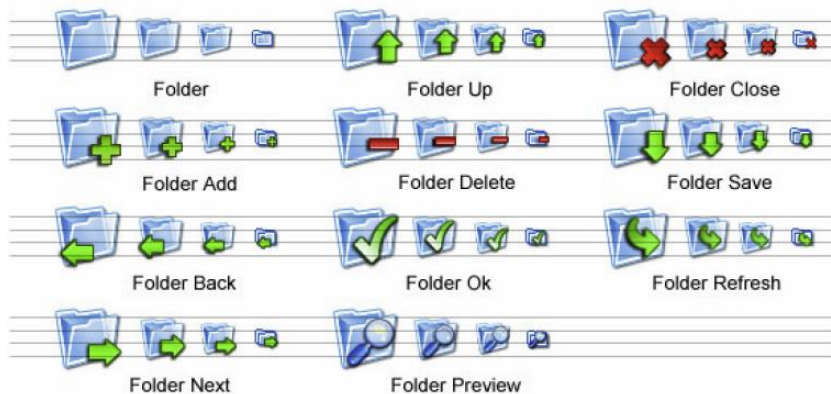


Tools - CIM LabVIEW Controls

v. Document

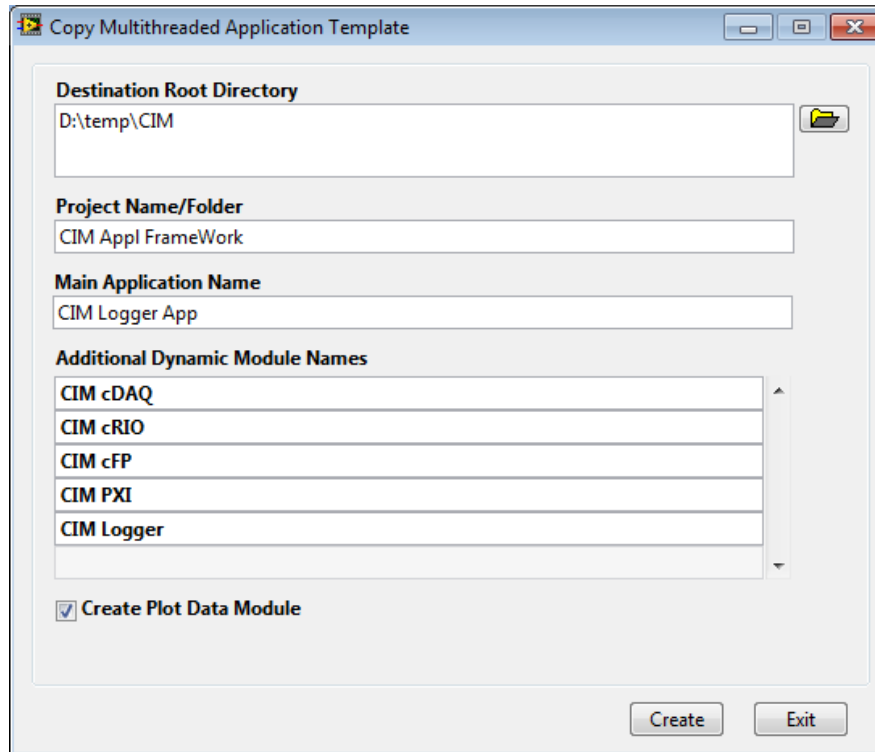


vi. Folder

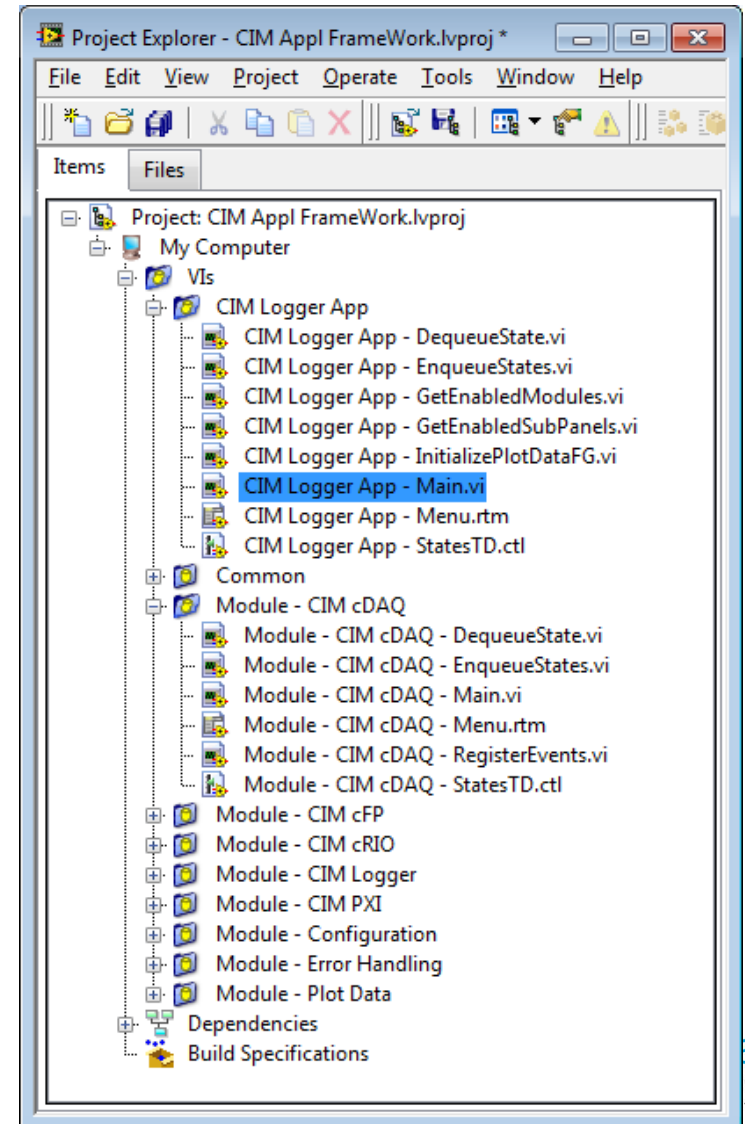


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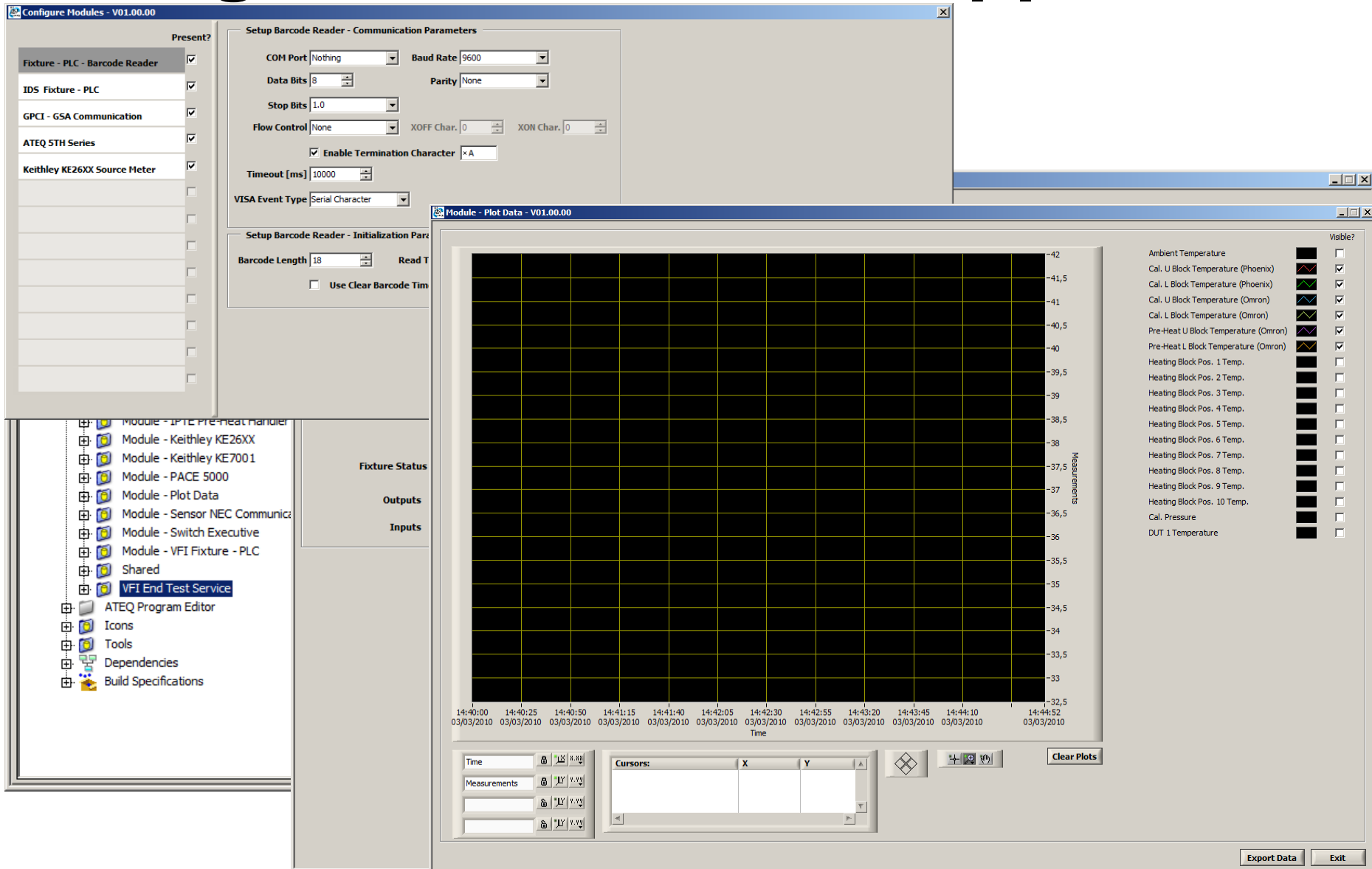
Tools - CIM LabVIEW Frameworks



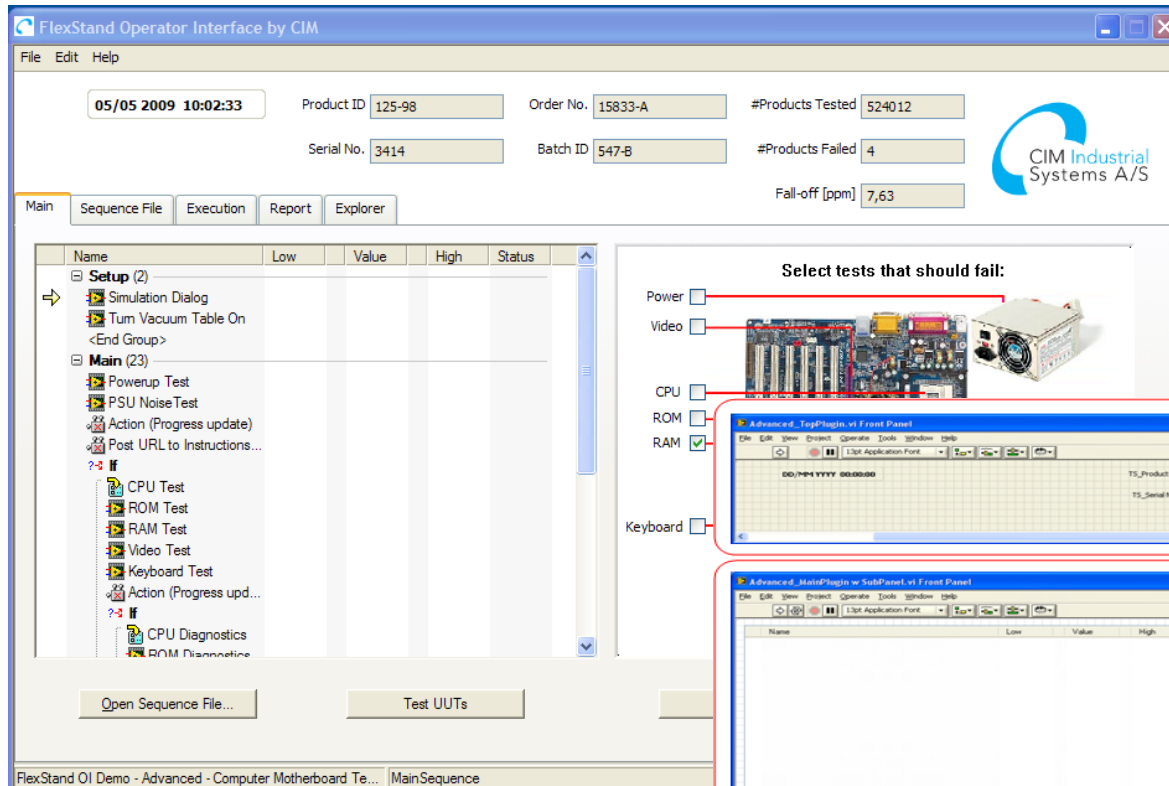
Multithreaded Appl FrameWork



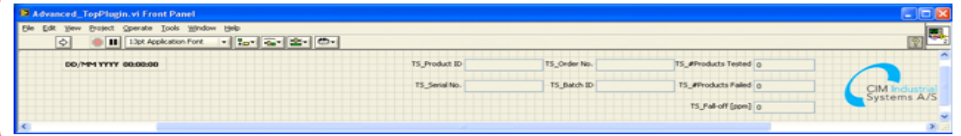
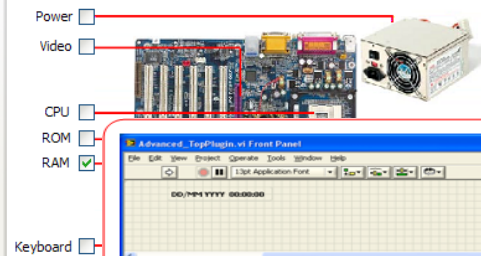
Design Patterns - DAQ Application



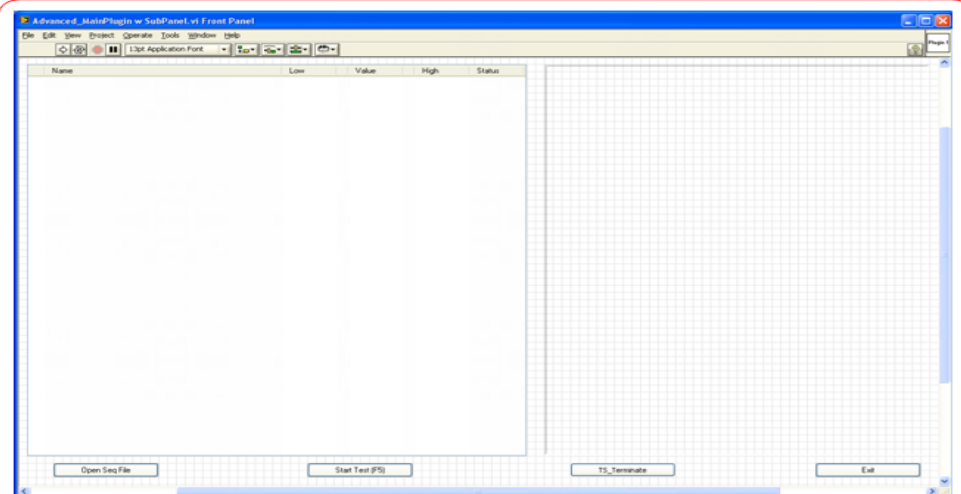
Design Patterns - Application



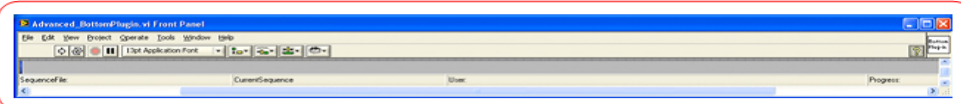
Select tests that should fail:



Top plugin



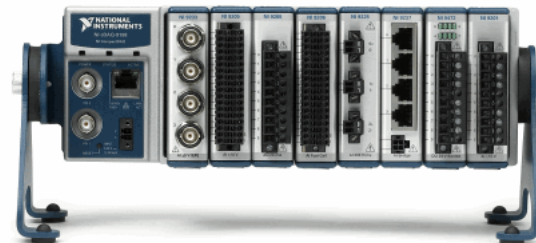
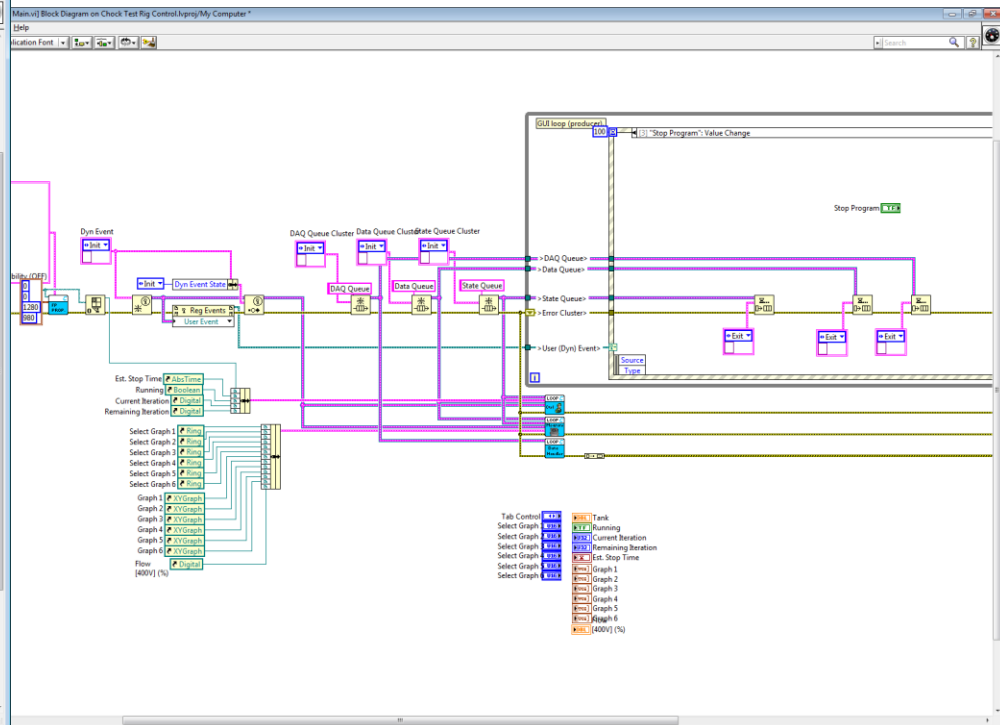
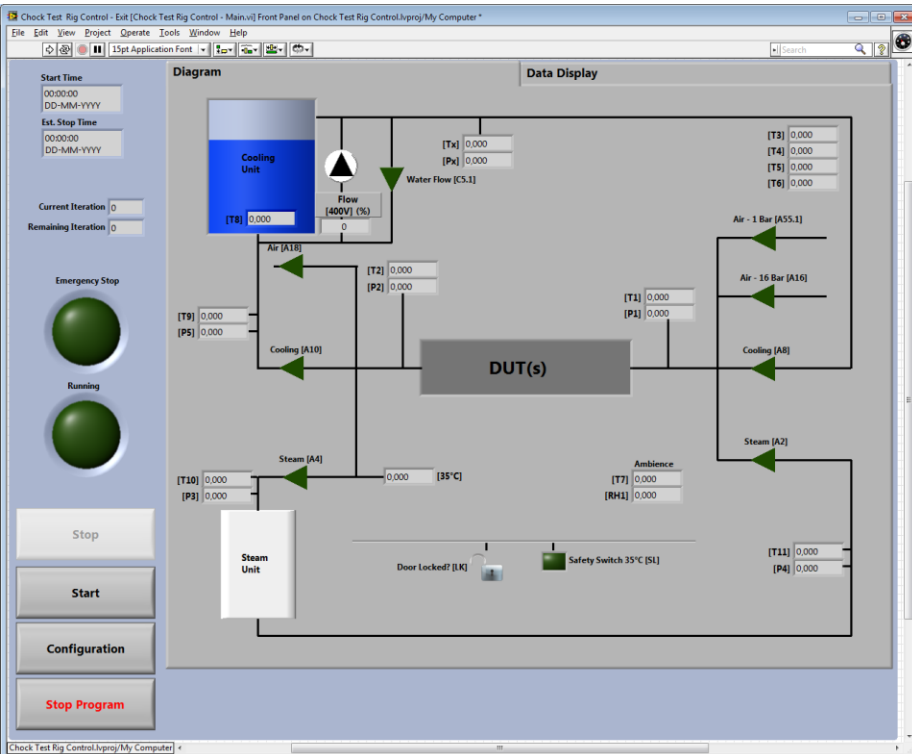
Main plugin



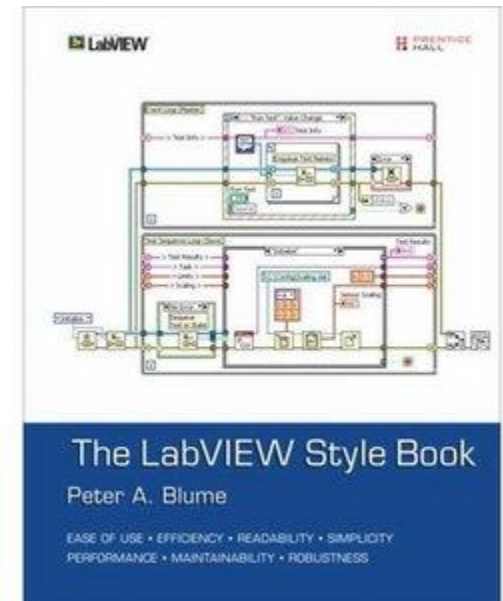
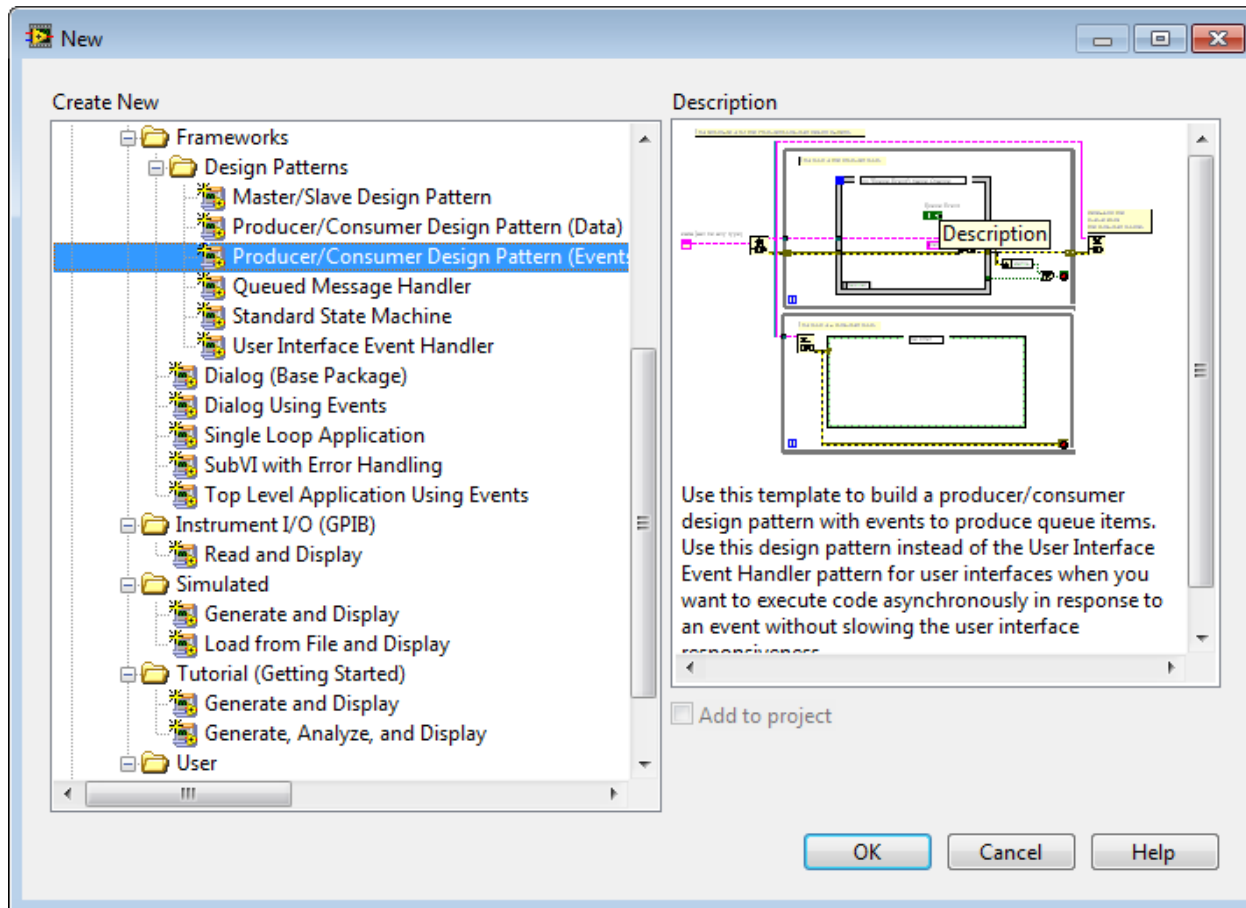
Bottom plugin

FLEXSTAND OI Main

Design Patterns - Control Application



Design Patterns – Other





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🇩🇰 På dansk

Welcome

You have just entered the virtual door of CIM Industrial Systems Inc., one of the most highly specialized Danish companies in the area of technical software solutions for the industry.

CIM is short for Computer Integrated Manufacturing and our highly specialized knowledge of industrial automation and technical IT is the core of our products and output. Output, which has one common trait: It increases the value of the production in your company.

Please navigate the menu on the left to read more about our expertise and products.

Enjoy – and once again, welcome.

CIM introduces Flexstand

FLEXSTAND

CIM has developed a revolutionizing operator interface for TestStand. The System is called Flexstand.

[Read more](#)

#1 in LabVIEW and TestStand

Europe's Leading

CIM cements their position as Europe's number 1 in LabView and TestStand.

[Read more](#)

Kildegården 4
7600 Struer
Tlf. 96 84 05 00

Jegstrupvej 96A
8361 Hasselager

Agern Allé 3
2970 Hørsholm



Thanks for the time

www.cim.as

www.flexstand.eu

mpe@cim.as

+45 23 71 85 05

