



## Mastering Complex Industrial Applications

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## What is Cognex Designer?

### Integrated Development Environment (IDE)

- Multi camera support
- 3D Profiling solution environment
- Drag & Drop graphical HMI
- Rich I/O support
- Database, Audit trail, Recipe management, ...

### Flexible integration platform

- Integrate 3<sup>rd</sup> party hardware such as motion stage etc.

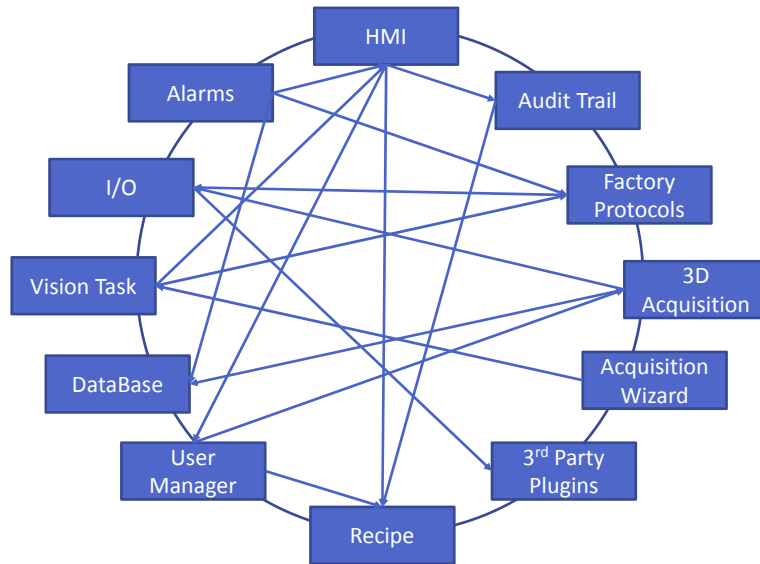
### Field configurable friendly solution

- Easily adapt solution to production changes

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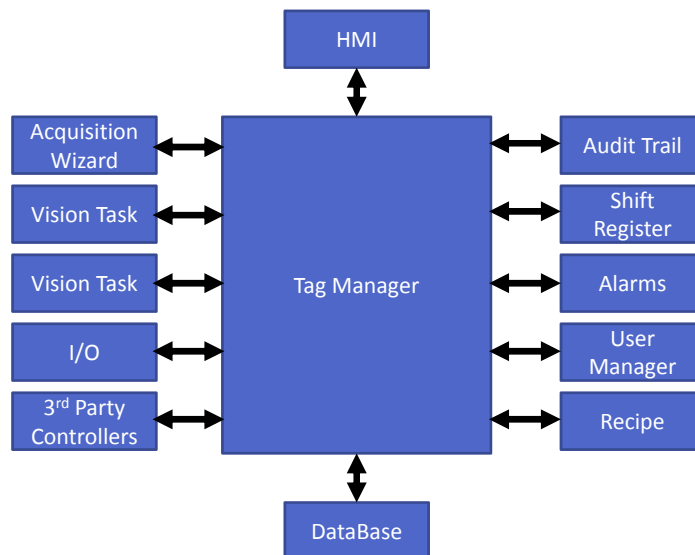
### Designer turns complex applications...



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### ...into maintainable solutions



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## ...simplifies multi camera acquisition

### Independent



### Dependent

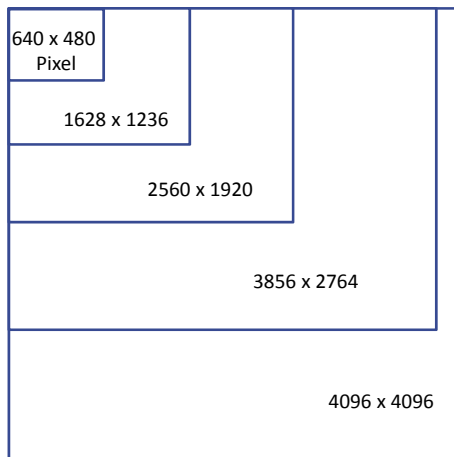


- Mix and match application acquisition requirements

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## ...expands the acquisition capabilities



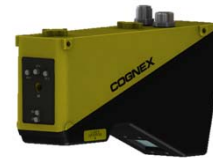
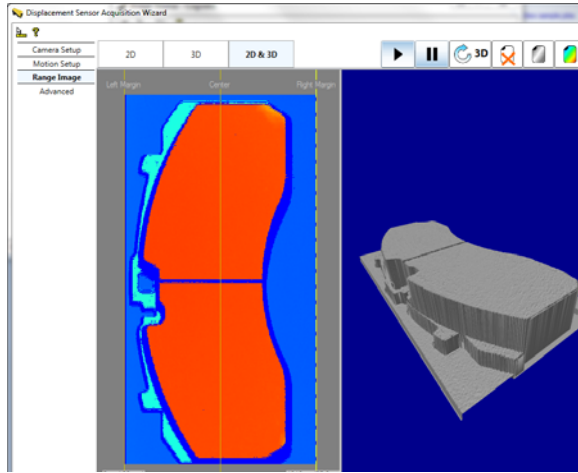
- ✓ High Speed
- ✓ Color
- ✓ Line Scan
- ✓ Partial Frame
- ✓ Global Shutter
- ✓ Rolling Shutter
- ✓ ...

- See what you need to see!

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## ...unleashes the full power of 3D



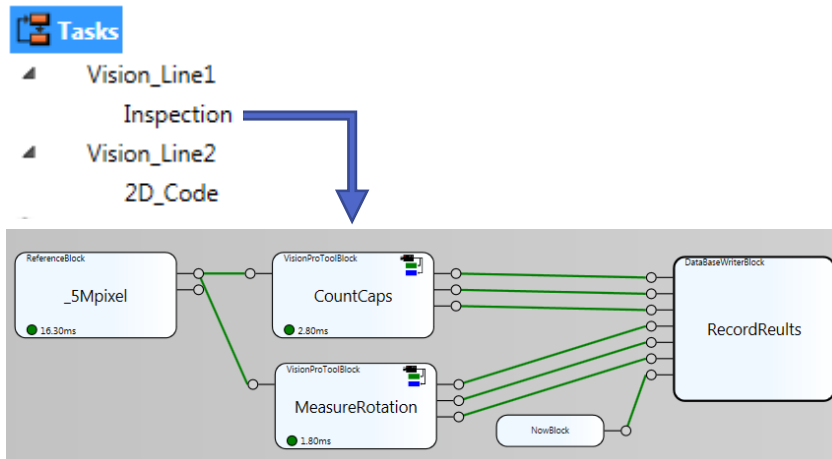
- Volume
- Height
- Tilt
- Cross Section
- ...

• 3D acquisition and processing has never been easier!

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## ...structures Vision into maintainable Tasks

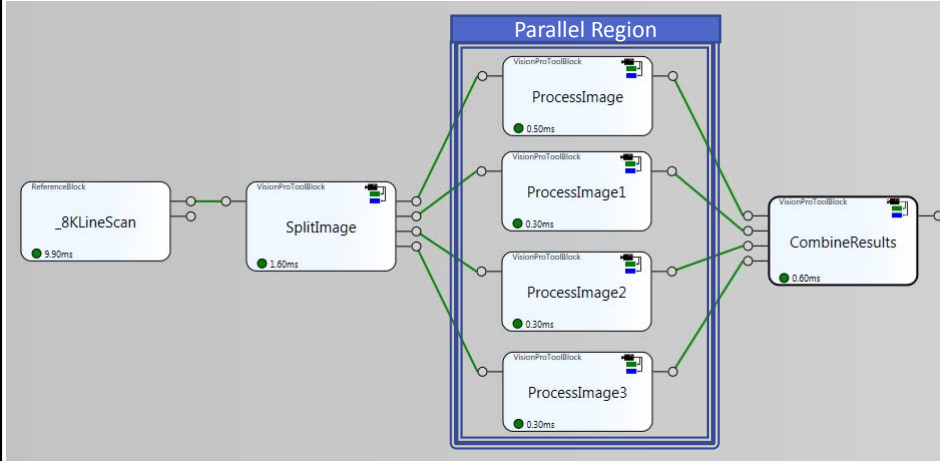


• Top-Down block design simplifies maintenance

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## ...masters parallel vision processing

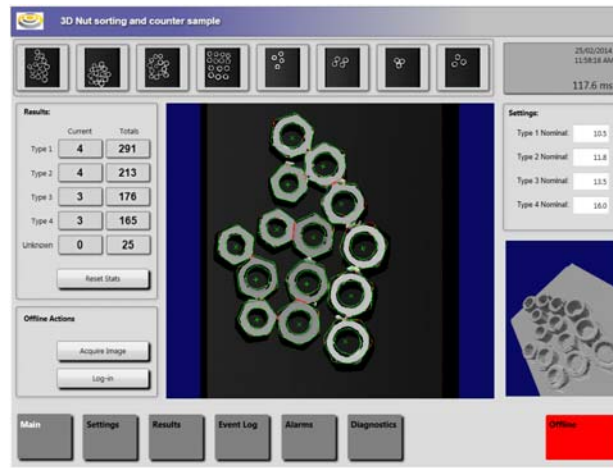


- Reaching maximum speed has never been easier!

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## ...enables HMI design by simple Drag & Drop



- Power Point like design of easy to use HMI's

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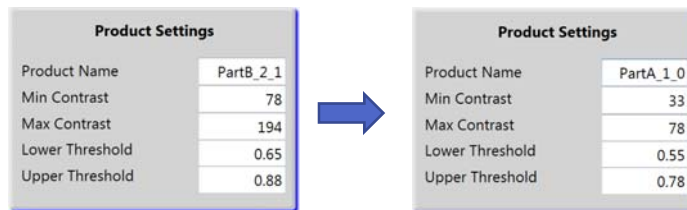
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## ...archives the production process

- **Audit Trail – tracking every user change**

Timestamp	User	Action	Old Value	New Value
2/26/2014 10:50	Administrator	Added new Part	PartB_2_1	PartC_1_0
2/20/2014 15:30	Operator	Changed Accept Threshold	0.54	0.5
2/17/2014 6:00	Operator	System booted		
2/16/2014 23:00	Operator	Shut Down System		
2/2/2014 7:35	Engineer	Retrained OCR		

- **Recipe – automated change of settings**



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## ...revolutionizes I/O connectivity

- **“All in One” Realtime CPU powered precision I/O’s**

- **Opto isolated 24V discrete I/O**
  - 8x Inputs
  - 16 x Outputs
  - Quadruple Encoder Input
- **Industrial Ethernet**
  - TCP/IP
  - EIP
  - ProfiNet
  - ...
- **Hardware Event Manager**
  - Delay lines, advanced handshaking, ...



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## ...boosts the performance

- **High Performance Vision Controller**

- **Mechanical**
  - Fan less Design
  - Robust Design for industrial environments
- **Processing**
  - i5 dual core CPU, 8GB memory
  - 120GB or 480GB SSD drive
- **Connectivity**
  - Precision I/Os with real-time sub-system
  - 4x CIC PoE GigE Vision ports
  - 3x USB 2.0, 2x LAN, 1x RS-232
  - Factory Communication Port
  - 2x DS1000 profiling sensor ports



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## ...provides maximum flexibility

- **Add 3<sup>rd</sup> party HMI controls**



- **Use Plug-ins to Integrate 3<sup>rd</sup> party hardware control**



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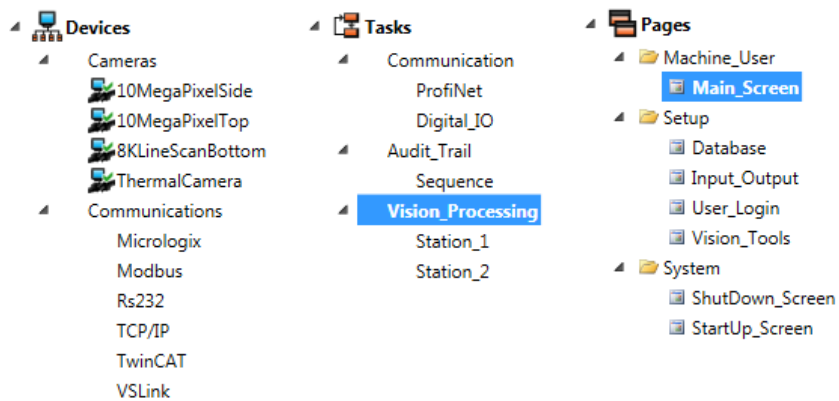
## ... creates maintainable solutions in 4 steps

1. **Create top level functional Building Blocks**
  - Devices, Tasks, Database, Scripts
2. **Configure functional building blocks**
  - Setup Acquisition, I/O, Vision ToolBlocks, ..
3. **Create HMI**
  - Design your HMI interface
4. **Define Data Flow**
  - Connect all functional blocks

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## Step 1: Create top level building blocks

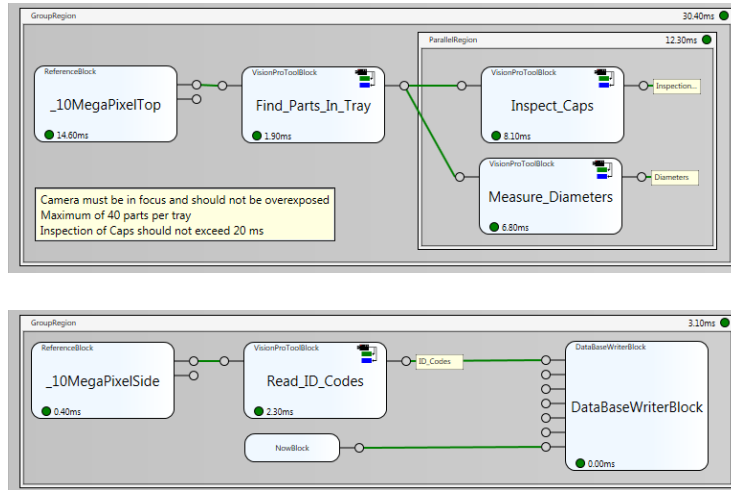


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## Step 2: Configure Building Blocks



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## Step 3: Design easy to use HMI

Results:	
Current	Totals
Type 1: 4	291
Type 2: 4	213
Type 3: 3	176
Type 4: 3	165
Unknown: 0	25

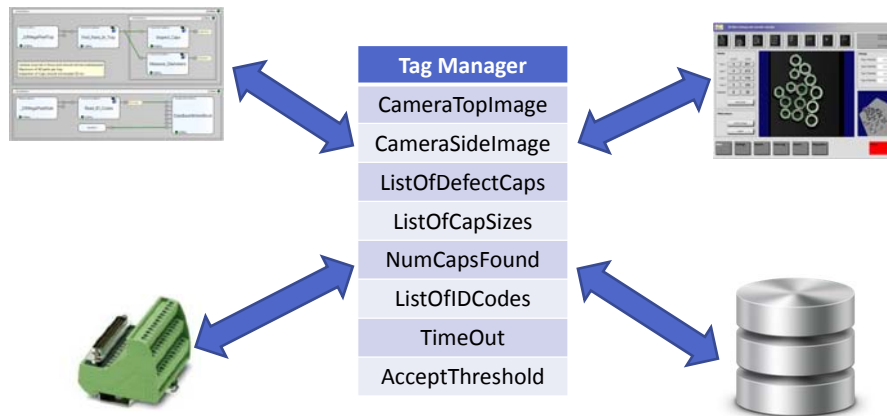
Settings:	
Type 1 Nominal:	10.5
Type 2 Nominal:	11.8
Type 3 Nominal:	13.5
Type 4 Nominal:	16.0

- Toolbox
  - Graphics
    - 3D Visualiser
    - Bezier Segment
    - Ellipse
    - Line
    - Panel
    - Rectangle
  - User Controls
    - Bar Graph
    - Button
    - Checkbox
    - Date/Time Entry
    - Label
    - ListBox
    - Numeric Entry
    - Password Box
    - Progress Bar
    - Selection Box
    - Slider
    - Table
    - Textbox
  - Media
    - Image
    - Video Player
  - Vision
    - Image Grid
    - Image Viewer
    - VisionPro Display
    - VisionPro Display 3D
    - VisionPro Tool Editor
    - VisionPro ToolBlock Editor

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## Step 4: Connect all functional blocks



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## Cognex Designer

### Powerful

- Easiest Multi Camera support
- Simple utilization of multicore architectures
- HMI designer with many controls

### Easy to develop and maintain

- Map complex applications into structured Building Blocks
- Adapt solution on FA floor to meet production changes

### Flexible

- Integrate any 3<sup>rd</sup> party hardware into Designer
- Integrate advanced 3<sup>rd</sup> party HMI Controls

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**Created by Automation Experts  
For Automation Experts**



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