The NA-MIC Programming Environment

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NA-MIC Kit Goals

• Software and Methodologies for Medical Image Computing
  – Facilitate Research
  – Promote Interoperability

• Stable, Cross-Platform Run Time Environment
  – Full Set of Core Features
  – Avoid Duplicated Effort

• Flexible Module Architecture
  – Plug-ins should be As Simple As Possible
The NA-MIC Kit integration
3D Slicer

- An end-user application for image analysis
- An open-source environment for software development
- A software platform that is both easy to use for clinical researchers and easy to extend for programmers
Modules Types

- Built-in modules
- Loadable modules
- Scripted modules
- Command line modules

Images courtesy of Jim Miller, Ph.D.
CLI Integration: Hello World Course

Programming course on the mechanism to plug-in an external program into Slicer
Going Further: Extensions

- Individual identity of modules
- Allow users to assemble their own set of tools
- Easy to download compatible extensions
Network Communication

3DSlicer

OpenIGTLink

Images, transforms, scanner controls …

Commercial Navigation System (e.g. BrainLab) or your tool

Image courtesy of Steve Pieper, Ph.D.
Batch Processing

Image courtesy of Marco Ruiz, Ph.D.
http://www.gridwizardenterprise.org/
# Parameter Space Exploration

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<th>Field</th>
<th>Selection/ Variants</th>
<th>Value Selection</th>
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Image courtesy of Marco Ruiz, Ph.D.
Plans for the future

• Slicer 4

• Qt and Numpy

• The Common Toolkit (CTK)
Acknowledgements

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