ITKv4 - The Next Generation
What is new in ITKv4

Insight Software Consortium

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ITKv4
10 Years Old
$ 5 Million
ARRA Funds
1.5 Years
Next 10 Years
Apache 2.0 License
Patented Directory
Removed
New Software Process
Software Process

- Git
- Git
- Gerrit
Software Process

- Git
- Gerrit
- cdash@home
Software Process

- Git
- Gerrit
- cdash@home
- Improved Testing Data
Modern C++
Deprecation of Compilers

- Visual Studio 6.0, 7.0
Deprecated Compilers

- Visual Studio 6.0, 7.0
- Borland 5.5
Deprecated Compilers

- Visual Studio 6.0, 7.0
- Borland 5.5
- Sun CC < 5.9
Deprecated Compilers

- Visual Studio 6.0, 7.0
- Borland 5.5
- Sun CC < 5.9
- SGI CC
Deprecated Compilers

- Visual Studio 6.0, 7.0
- Borland 5.5
- Sun CC < 5.9
- SGI CC
- MWORKS
Deprecated Compilers

- Visual Studio 6.0, 7.0
- Borland 5.5
- Sun CC < 5.9
- SGI CC
- MWORKS
- Cygwin
 Deprecated Compilers

- Visual Studio 6.0, 7.0
- Borland 5.5
- Sun CC < 5.9
- SGI CC
- MWORKS
- Cygwin
- GCC < 3.4
64 Bits
Since 2008
Since 2008

In Windows 64bits: unsigned long is 32bits
Since 2008

In Windows 64bits:
unsigned long is 32bits

Use typedef!
Since 2008

In Windows 64bits: unsigned long is 32bits

Use typedef!

ITK_USE_64BITS_IDE
Modularization
Modularization

- 98 Modules
Modularization

- 98 Modules
- Groups
Modularization

- 98 Modules
- Groups
- External Modules
Size distribution (in bytes) of ITK Modules
Statistics Framework
DICOM
GDCM 2.0
- GDCM 2.0
- Query / Retrieve
- GDCM 2.0
- Query / Retrieve
- RT Struct
FEM Refactoring
FEM Refactoring

- Code Clean up
FEM Refactoring

- Code Clean up
- Removed subversive pointers
FEM Refactoring

- Code Clean up
- Removed subversive pointers
- FEM IO
Level Sets Refactoring
Level Sets Refactoring

- Generalization for Images and Meshes
Generalization for Images and Meshes

Modular Terms
Image Registration
Refactoring
Composite Transform
Image Registration Refactoring

- Composite Transform
- Symmetric Registration
Image Registration Refactoring

- Composite Transform
- Symmetric Registration
- Transforms IO
Registration
Parameter Tuning
GPU
GPU Module
GPU

- GPU Module
- GPU Image
- GPU Module
- GPU Image
- GPU ImageToImageFilter
GPU

- GPU Module
- GPU Image
- GPU ImageToImageFilter
- Factories
SimpleITK
Hiding Templates
- Hiding Templates
- Smarter IO
- Hiding Templates
- Smarter IO
- Procedural Programming
• Hiding Templates
• Smarter IO
• Procedural Programming
• Easier Wrapping
• Hiding Templates
• Smarter IO
• Procedural Programming
• Easier Wrapping
• Binary Distribution
New Fields
New Fields

- Microscopy
New Fields

- Microscopy
- Video
New Fields

- Microscopy
- Video
- Remote Sensing
Video Bridge
• OpenCV
Video Bridge

- OpenCV
- VXL
- OpenCV
- VXL
- Video Filters
Video Grabber
Laparoscopy
Laparoscopy

Ultrasound
Microscopy
Deconvolution
Deconvolution

Denoising
Microscopy

- Deconvolution
- Denoising
- Color correction
- Deconvolution
- Denoising
- Color correction
- Colocalization
Deconvolution
Denoising
Color correction
Colocalization
File Formats
Large Images
Large Images

- JPEG 2000
Large Images

- JPEG 2000
- Tiling
Large Images

- JPEG 2000
- Tiling
- HDF5
Large Images

- JPEG 2000
- Tiling
- HDF5
- Multi-Resolution Levels
Insight Journal
Git Backend
- Git Backend
- Virtual Appliances
- Git Backend
- Virtual Appliances
- CDE
• Git Backend
• Virtual Appliances
• CDE
• Reproducible Research
Migration Guide
http://ij.itk.org/itkfaq
Live Long and Prosper!