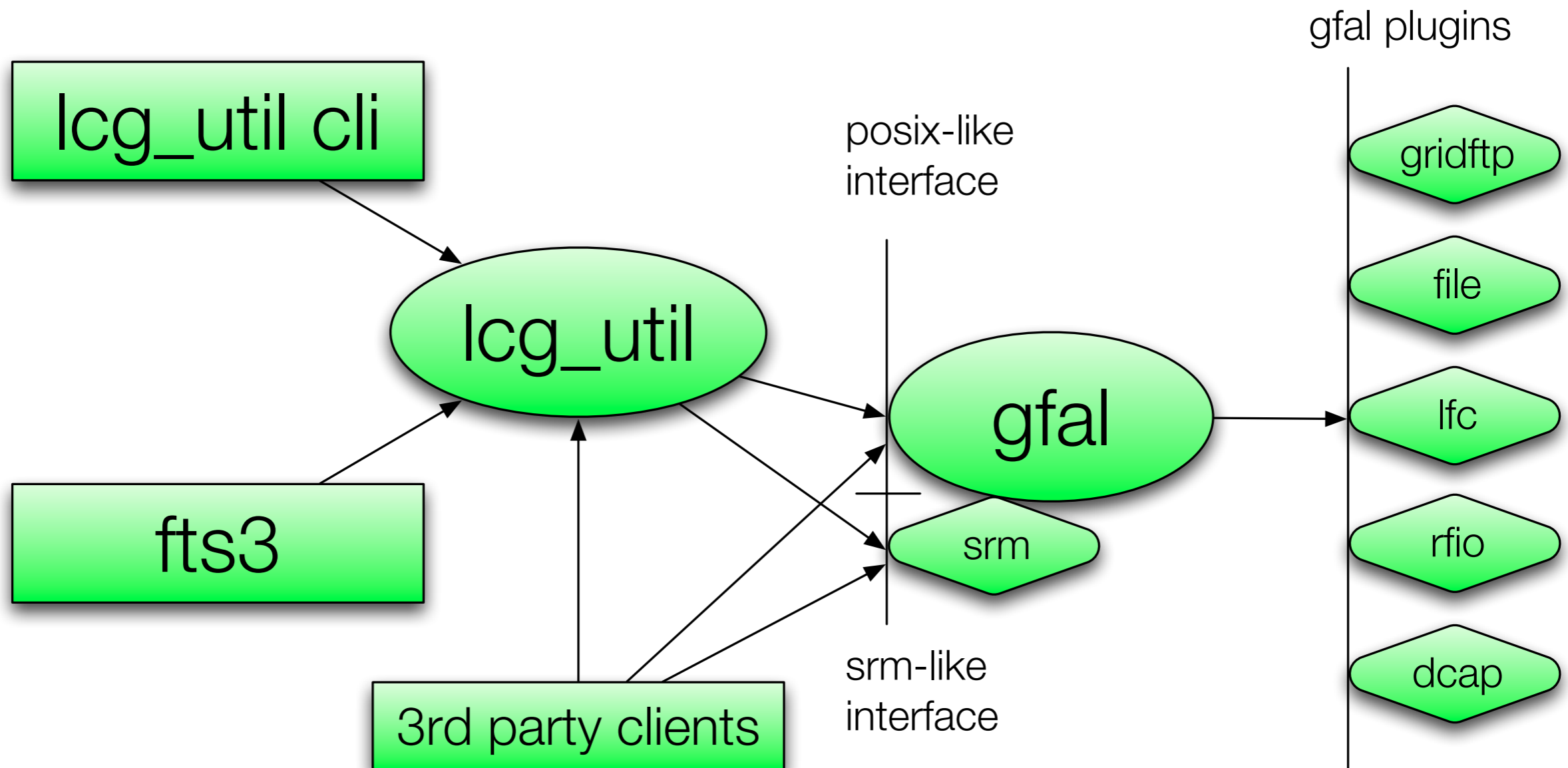# EMI_datalib
consolidating ARC and gLite data libraries

Jon Kerr Nilsen
EMI JRA1 deputy
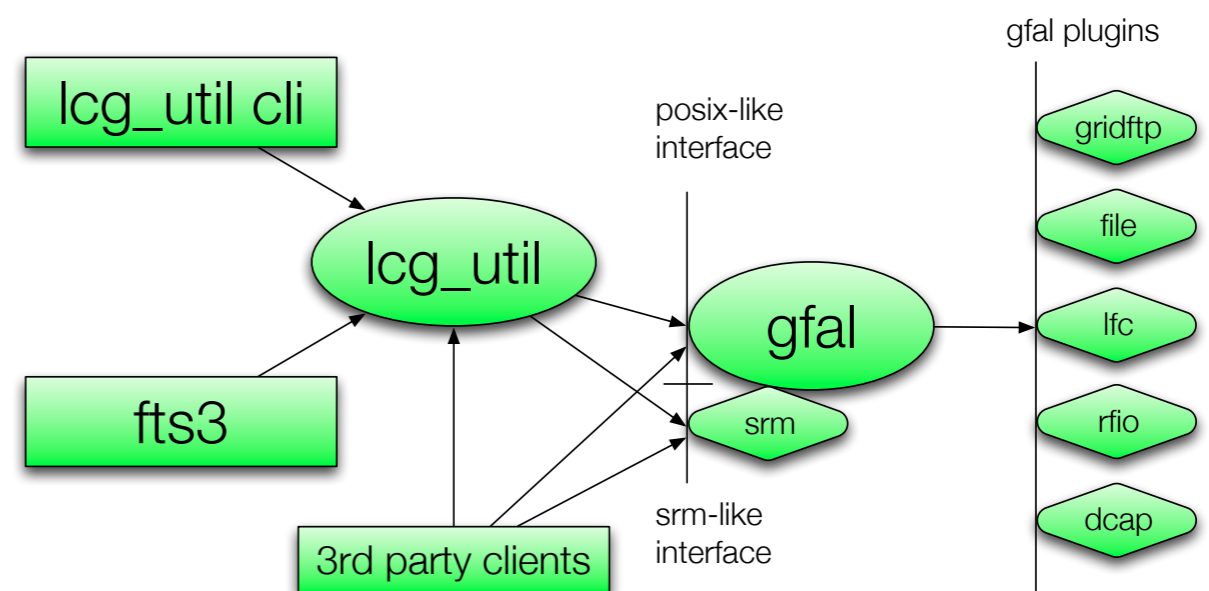On behalf of the EMI_datalib TF

Outline

- What we have
  - lcg_util/GFAL
  - ARC data tools/libarcdata
- What we'll make
  - EMI_datalib
  - Pros and cons
- Way forward
  - Expected obstacles
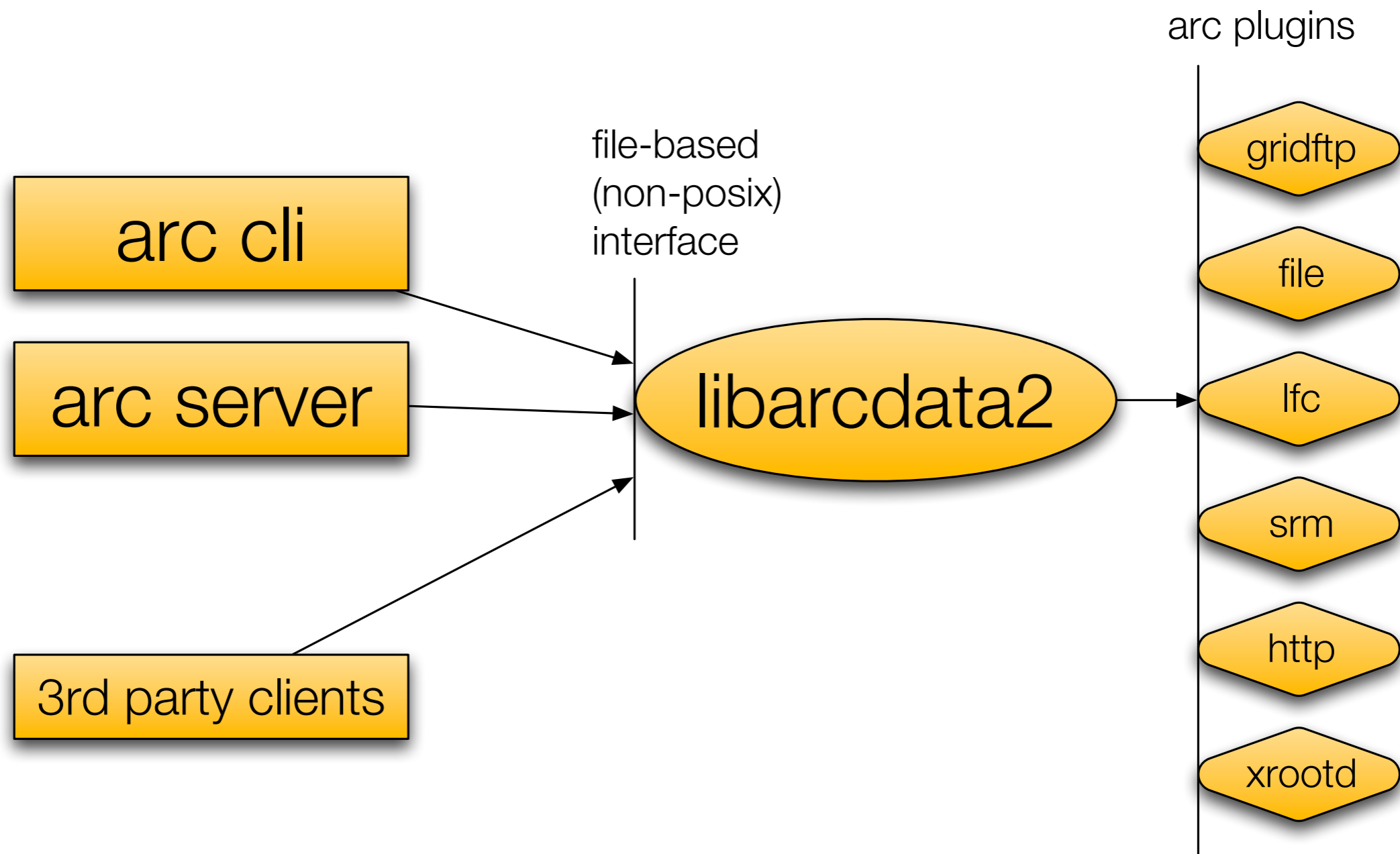 - Expected timeline

lcg_utils/GFAL

lcg_util/GFAL

- POSIX-like interface (GFAL)
- Protocols handled in plugins
- Higher-level file operations through lcg_util
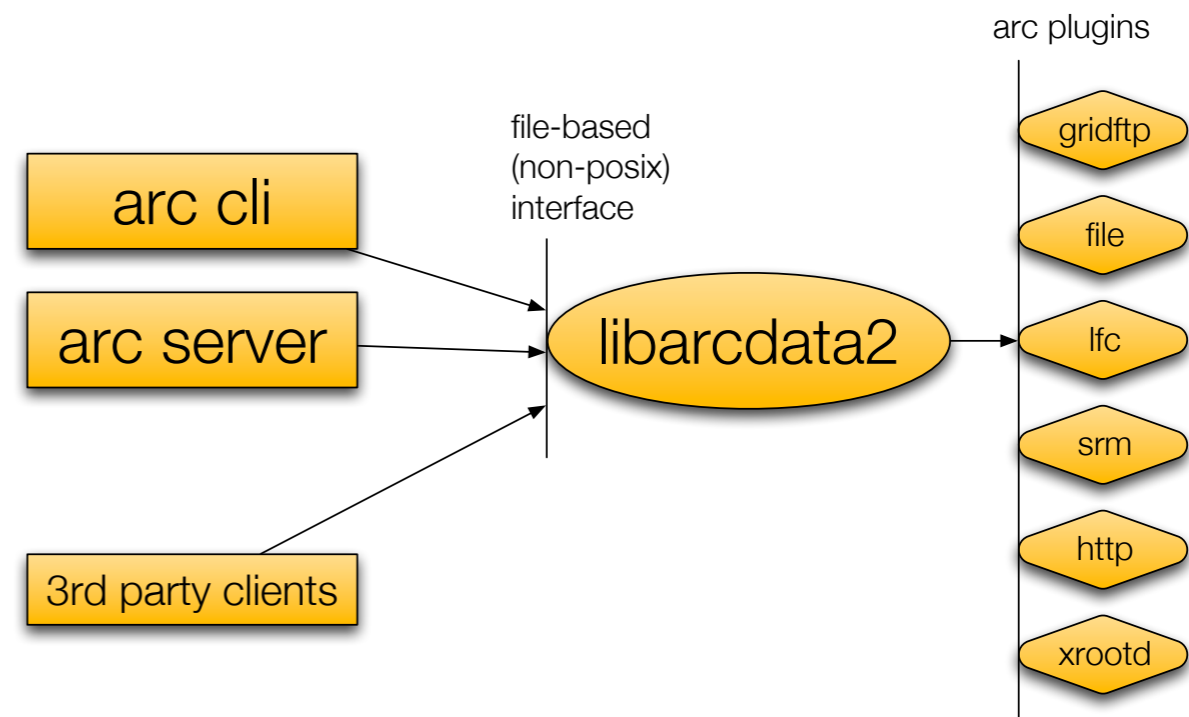- Support for SL5
- Written in C
- Will be used in FTS3

EMI INFSO-RI-261611

ARC data tools/libarcdata

arc plugins

arc cli

arc server

3rd party clients

file-based
(non-posix)
interface

libarcdata2

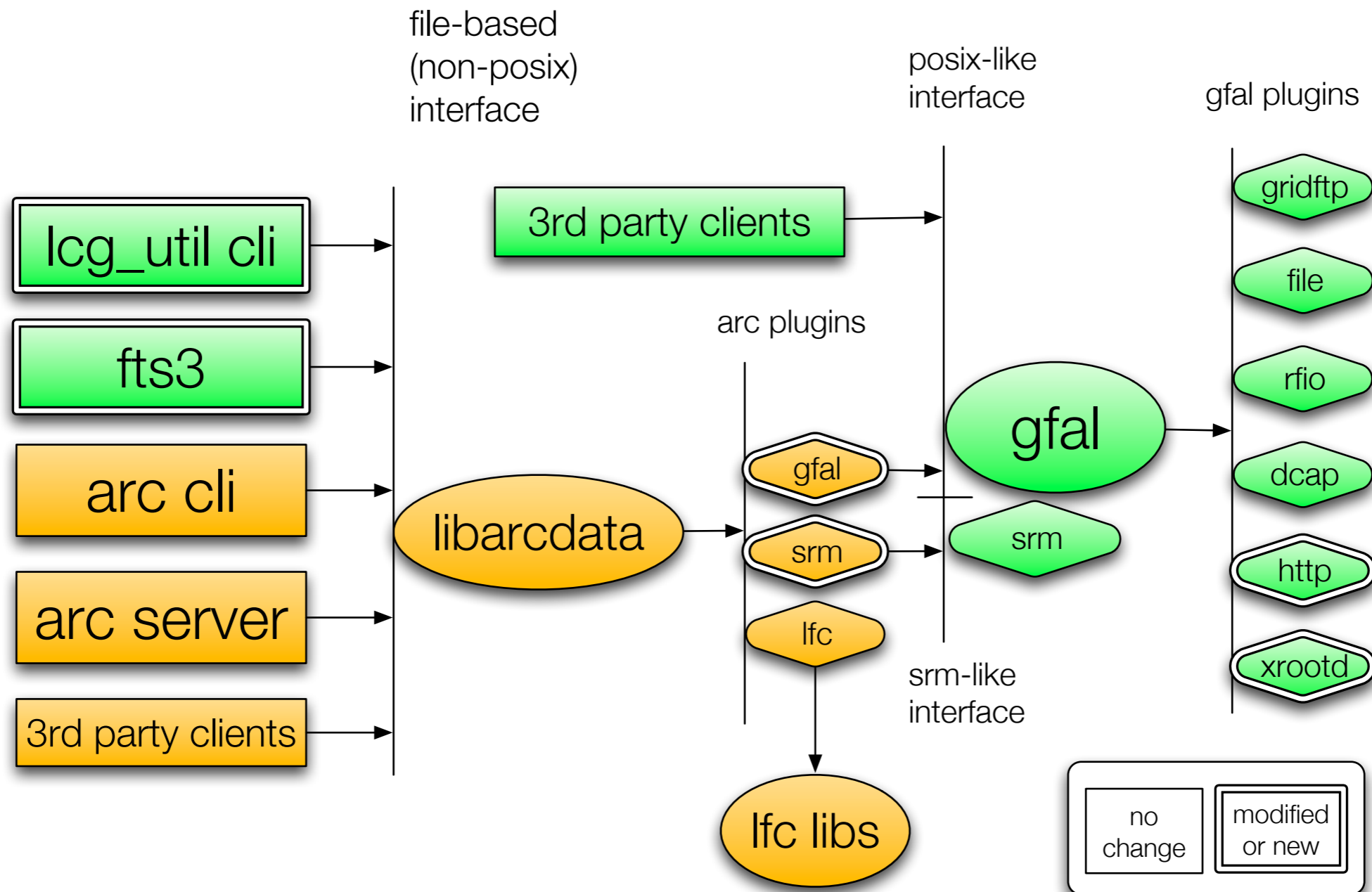gridftp

file

lfc

srm

http

xrootd

ARC data tools/libarcdata

- File based interface (libarcdata2)
- Protocols handled by plugins
- Lacks third-party transfer
- Support for Linux, Mac OSX, Windows
- Written in C++
- Used by ARC CE

arc plugins

arc cli

arc server

3rd party clients

file-based
(non-posix)
interface

libarcdata2

gridftp
file
lfc
srm
http
xrootd

EMI_datalib

file-based
(non-posix)
interface

posix-like
interface

gfal plugins

| lcg_util cli |

| fts3 |

| arc cli |

| arc server |

| 3rd party clients |

| 3rd party clients |

arc plugins

libarcdata

gfal

srm

lfc

srm-like
interface

gfal

gridftp

file

rfio

dcap

srm

http

xrootd

lfc libs

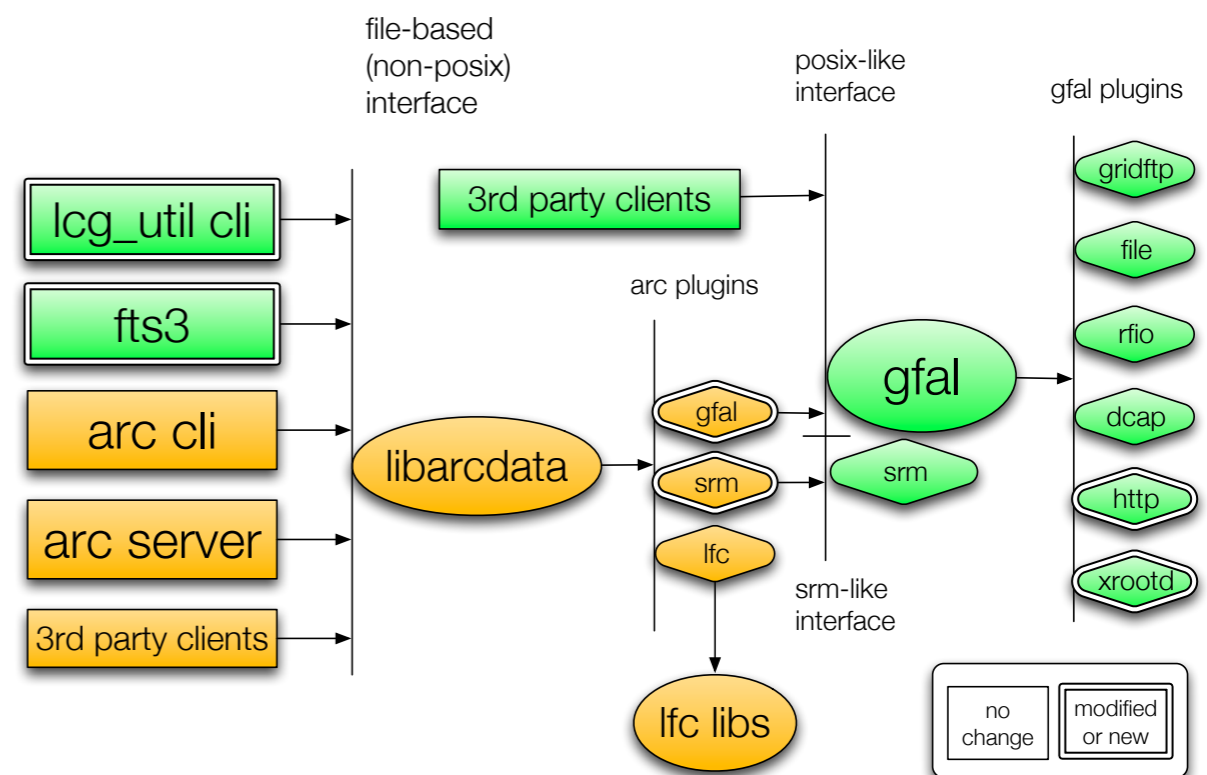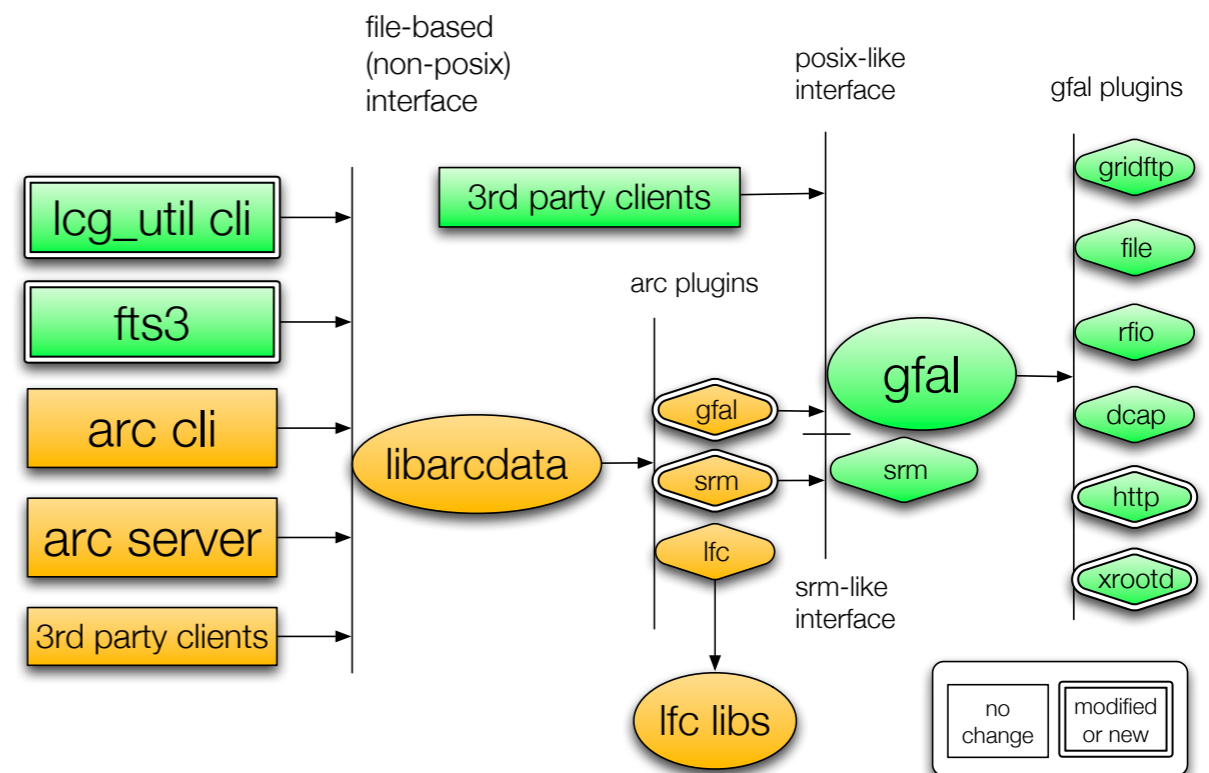| no change | modified or new |

EMI_datalib

- Why?
  - One set of file transfer plugins instead of two
  - One set of control plugins instead of two
  - Both file-based and POSIX in same library
  - GFAL gets http and xrootd, ARC gets third-party transfer
  - Clear division of components
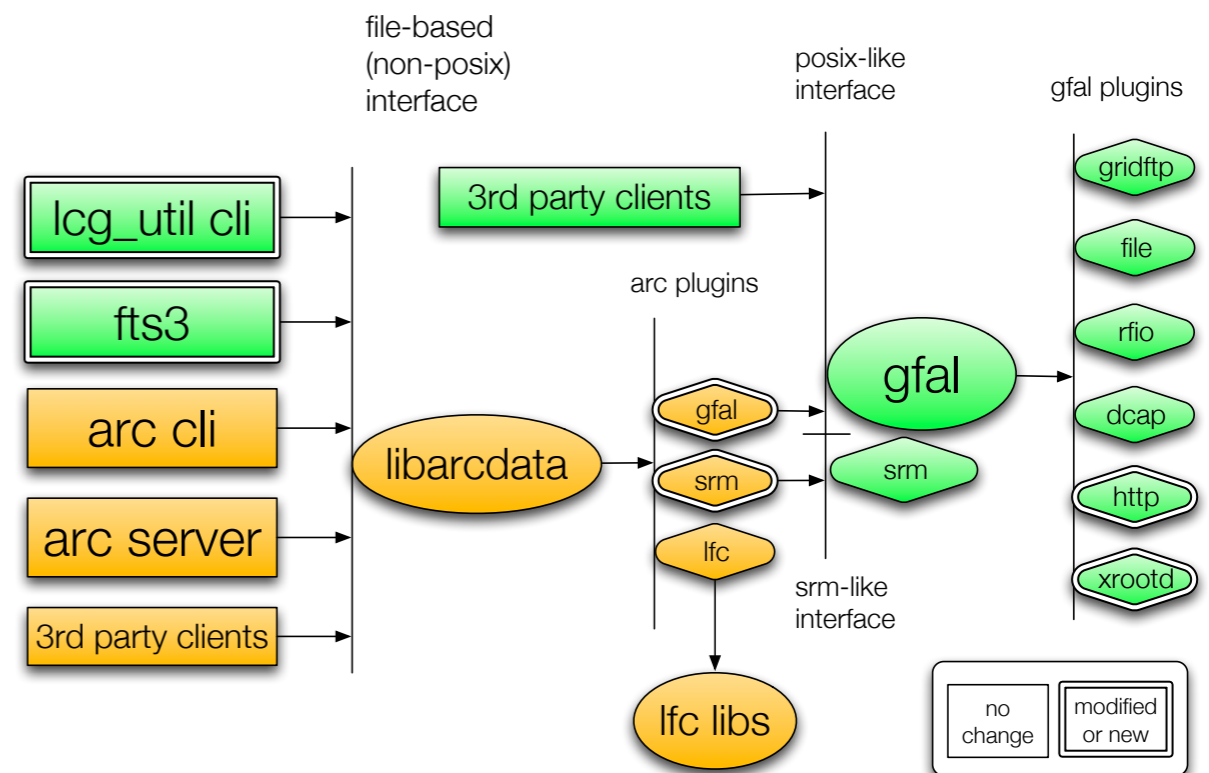 - CLIs unchanged – no change for existing users

EMI_datalib

- Why not?
  - All development moved to consolidation – no new features in old version
  - Users will need to do more radical changes to get new features
  - Not a radical reduction of code base compared to the effort needed for consolidation

9

EMI_datalib

- More pro's than con's

- Seems to be more to gain than to lose

- Packaging, dependencies and environment variables may need some ironing

- OS support may need some thinking

- gLite and ARC will have to pull together – an achievement on its own :)

file-based
(non-posix)
interface

posix-like
interface

gfal plugins

lcg_util cli

3rd party clients

gridftp

file

fts3

arc plugins

rfio

arc cli

libarcdata

gfal

gfal

dcap

srm

srm

arc server

lfc

http

srm-like
interface

xrootd

3rd party clients

lfc libs

no change | modified or new

Timeline

- October 2011: Deliver consolidation plan in EMI
  - Draft exists - main ideas ready

- December 2011: Finish prototype implementation
  - Prototype should be ready for EMI-2
  - Merging two data access libraries in 2 months - delays may occur
  - Initial work already started

- 2012: Testing
  - Lots of testing needed to arrive to production ready code
  - Affected components: FTS and ARC CE
  - Any testing help appreciated!

- December 2012: Finish migration to EMI_datalib

Thank you!