



Enabling Grids for E-science

gLite Certification and Deployment Process

Markus Schulz, SA1, CERN

EGEE 1st EU Review

9-11/02/2005

www.eu-egee.org



- **Current Release and Deployment Procedures**
- **Experience**
- **Additional Input**
- **New Procedures**
 - gLite & LCG
 - preproduction service
- **Summary**

- **Monthly process (sequential)**
 - **Gathering of new material**
 - **Prioritization**
 - **Integration of items on list**
 - **Deployment on testbeds**
 - **First tests**
 - **feedback**
 - **Release to EIS testbed for experiment validation**
 - **Full testing (functional and stress)**
 - **feedback to patch/component providers**
 - **final list of new components**
 - **Internal release (LCFGng)**
- **On demand (parallel)**
 - **Preparation/Update of release notes for LCFGng**
 - **Preparation/Update of generic install documentation**
 - **Test installations on GIS testbeds**
 - **Update of user documentation**
 - **Announcement on the LCG-Rollout list**

OMC
GIS
Grid Infrastructure
Support

GDB
Grid Deployment
Board

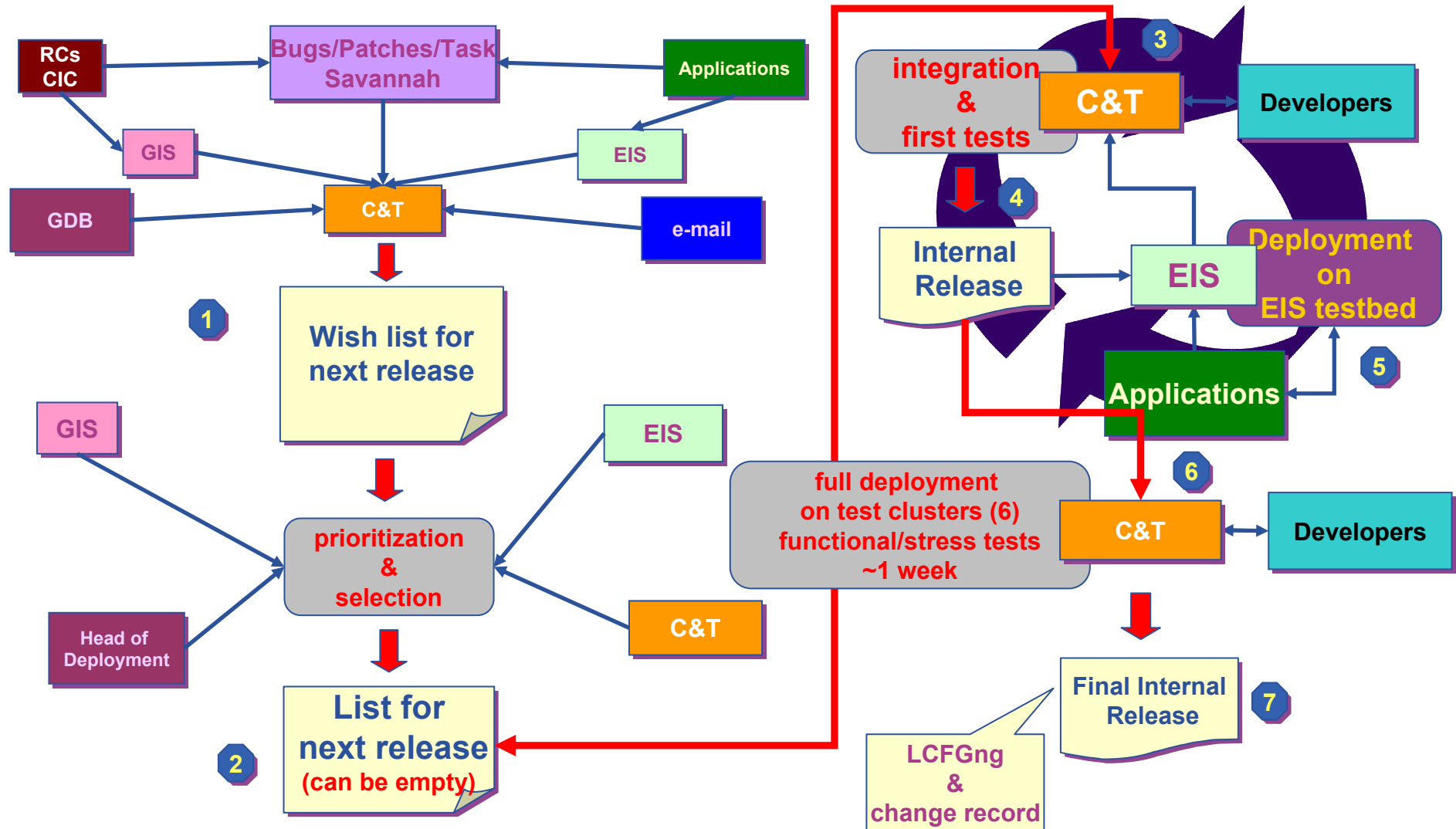
OMC
C&T
Certification & Testing

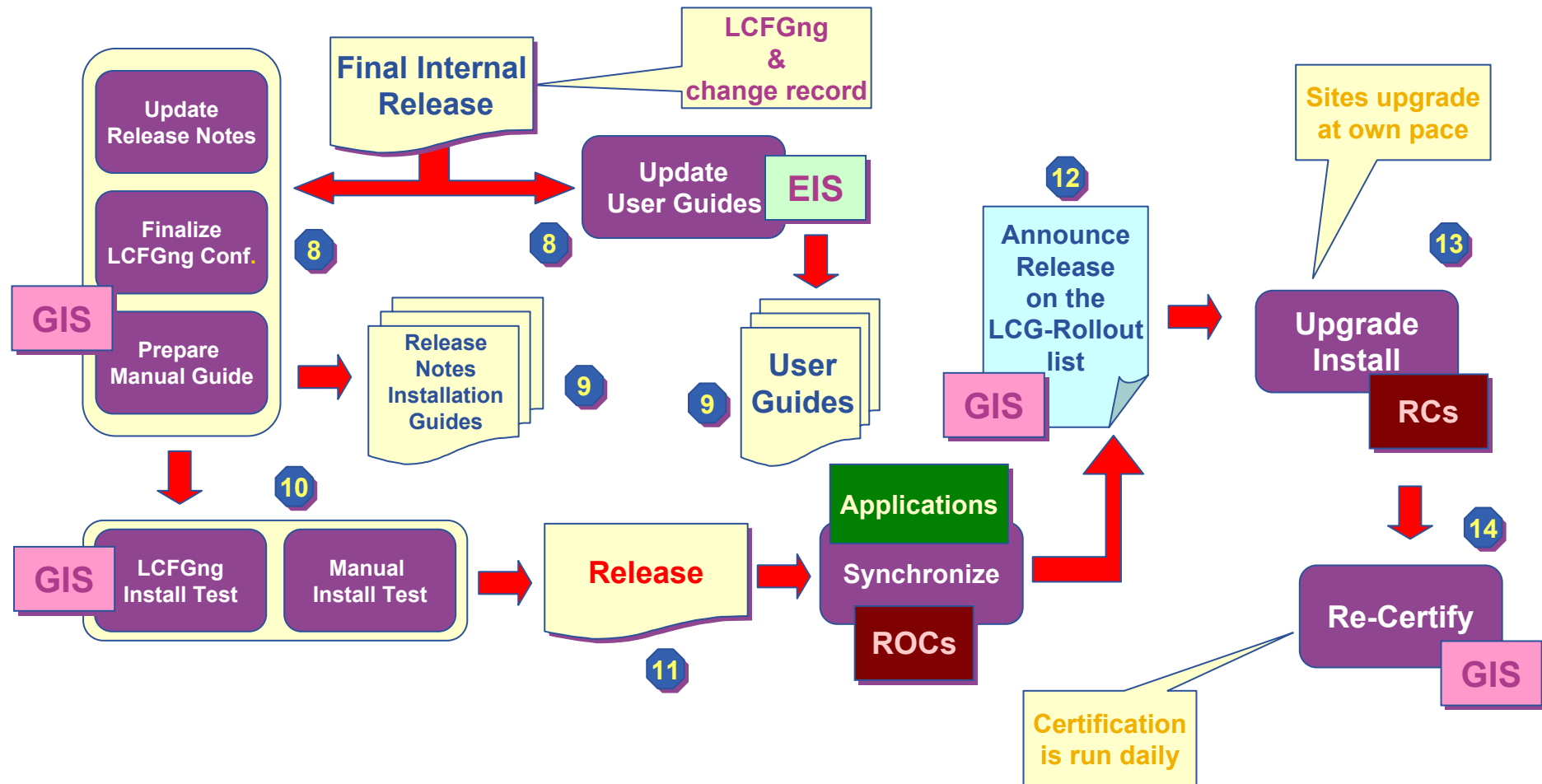
EIS
Experiment/Application
IntegrationSupport

Applications

CICs/ROCs

RCs
(sites)



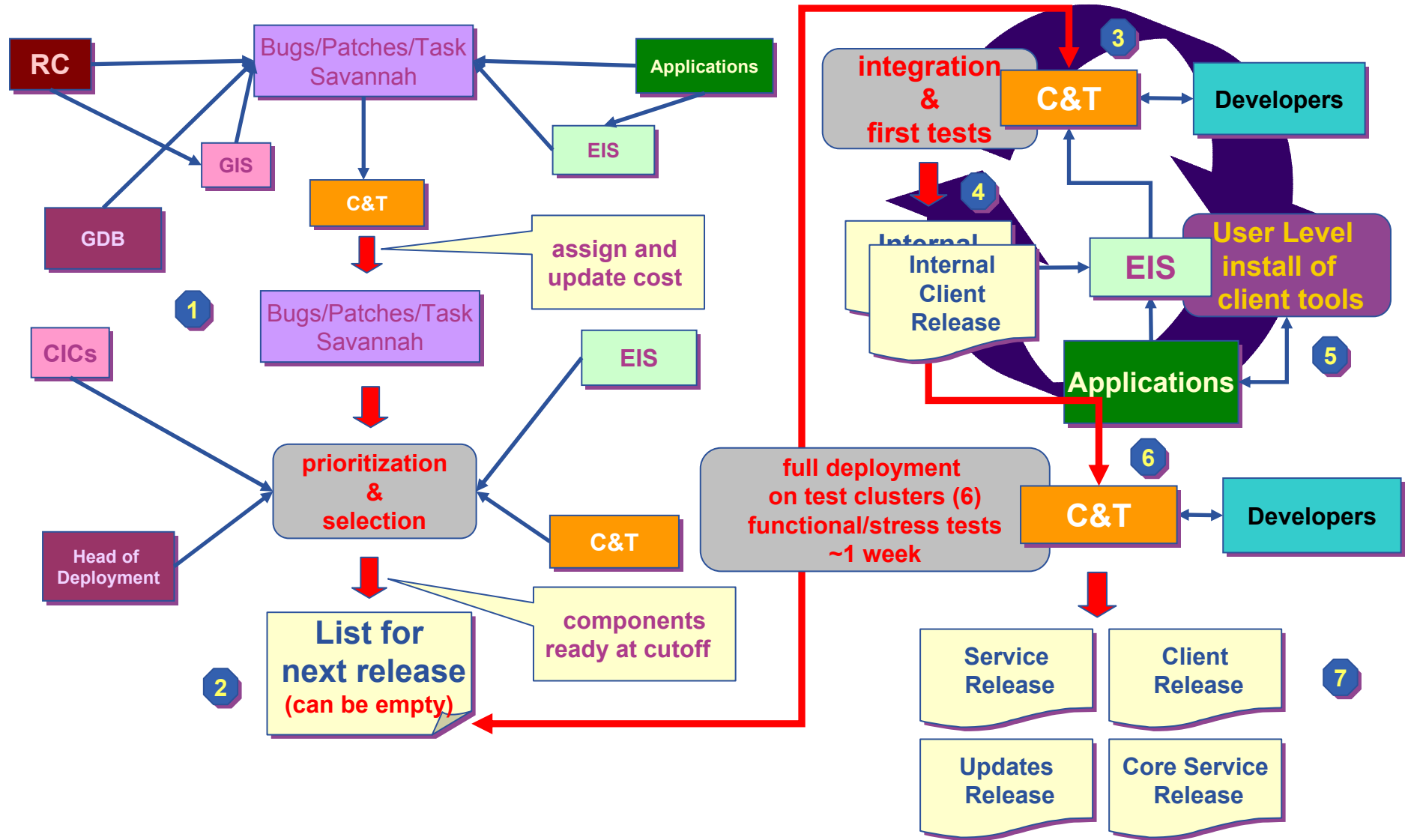


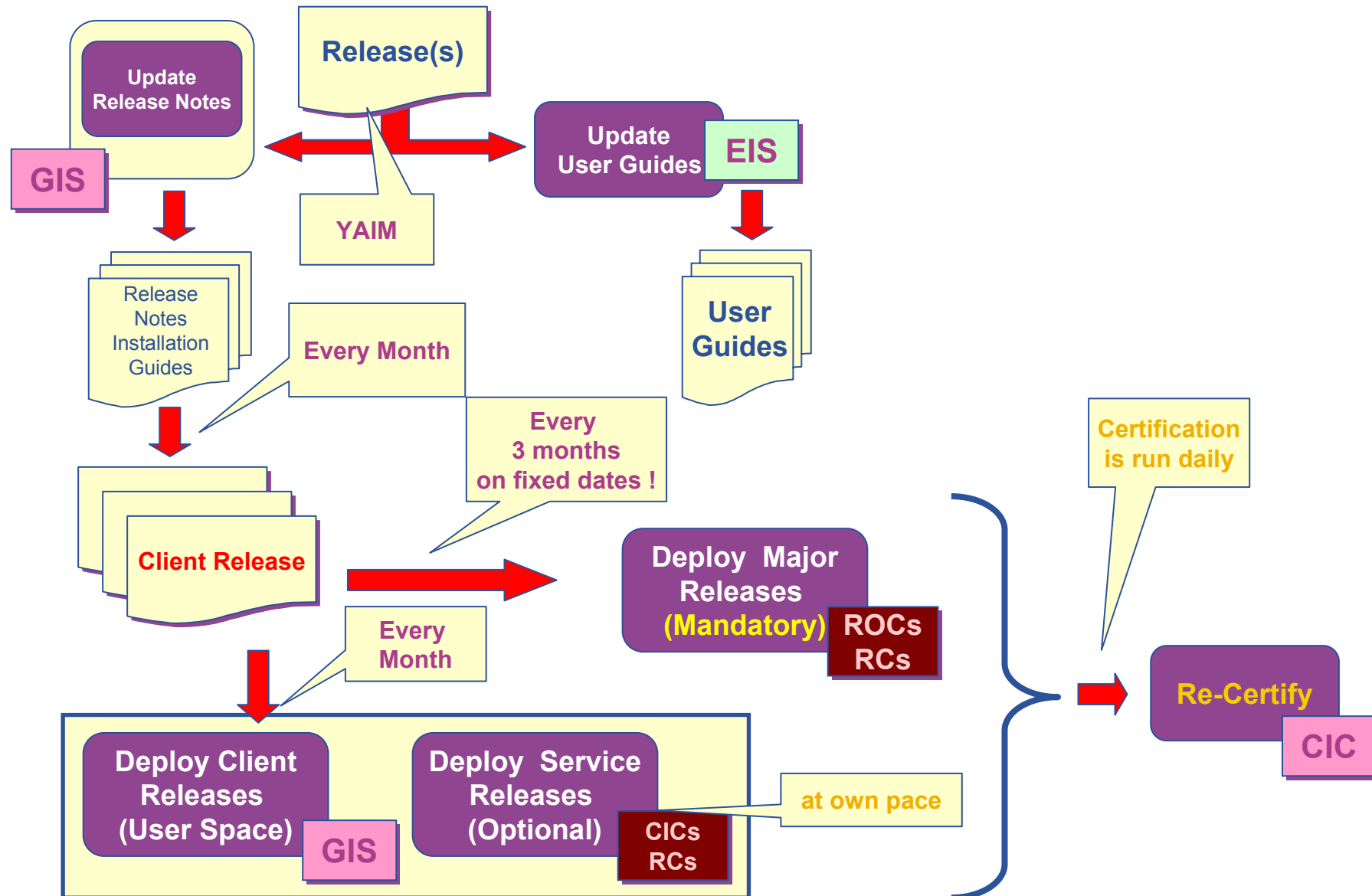
- **Process was decisive to improve the middleware**
- **The process is time consuming (5 releases 2004)**
 - Many sequential steps
 - Many different site layouts have to be tested
 - Format of internal and external releases differ
 - Multiple packaging formats (tool based, generic)
 - All components are treated equal
 - same level of testing for non vital and core components
 - new tools and tools in use by other projects are tested to the same level
- **Process to include new components is not transparent**
- **Timing for releases difficult**
 - users: **now** sites: **scheduled**
- **Upgrades need a long time to cover all sites**
 - some sites had problems to become functional after an upgrade

- **Data Challenges**
 - client libs need fast and frequent updates
 - core services need fast patches (functional/fixes)
 - applications need a transparent release preparation
 - many problems only become visible during full scale production
- **Installation tool is not available for new OS versions**
- **Configuration is a major problem on smaller sites**
- **Operations Workshop**
 - smaller sites can handle major upgrades only every 3 month
 - sites need to give input in the selection of new packages
 - resolve conflicts with local policies
- **gLite releases need to be deployed**
 - software already partially tested by JRA1
 - unit and functional tests
 - certification will need fewer iterations
 - preproduction service
 - replaces part of the certification process
 - LCG2 and gLite have to run side by side (coexist on same fabric)

- **Simple Installation/Configuration Scripts**
 - YAIM (YetAnotherInstallMethod)
 - semi automatic simple configuration management
 - based on scripts (easy to integrate into other frameworks)
 - all configuration for a site are kept in one file
 - APT (Advanced Package Tool) based installation of middleware RPMs
 - simple dependency management
 - updates (automatic on demand)
 - no OS installation
 - Client libs packaged in addition as user space tar-ball
 - can be installed like application software
- **Process (in development)**
 - *new process to gather and prioritize new packages*
 - formal
 - *tracking tool, priorities are assigned to the packages*
 - *cost to completion assigned (time of a **specific** individual) at cut off day*
 - selection process with participation of applications, sites and deployment
 - work will continue based on priority list between releases (rolling)

- **different release types**
 - client libs (UI, WN)
 - services (CE, SE)
 - core services (RB, BDII,..)
 - major releases (configuration changes, RPMs, new services)
 - updates (bug fixes) added any time to specific releases
 - non critical components will be made available with reduced testing
- **Fixed release dates for major releases (allows planning)**
 - every 3 month, sites have to upgrade within 3 weeks
- **Minor releases every month**
 - based on ranked components available at a specific date in the month
 - not mandatory for smaller RCs to follow
 - client libs will be installed as application level software
 - early access to pre-releases of new software for applications
 - client libs. will be made available on selected sites
 - services with functional changes are installed on EIS-Applications testbed
 - **early feedback from applications**





- **Differences**
 - unit and functional test already performed by JRA1
 - releases have to be synchronized between JRA1, SA1 based on NA4's priorities
- **New Sequence**
 - Certification Testbed (CERN)
 - installation/config tests
 - rerun functional tests (to validate configuration)
 - synthetic stress tests
 - Preproduction Service
 - Sites
 - *Krakow, FZK, IN2P3, CNAF, Padua, Bari, NIKHEF, SNIC, Protvino-IHEP, UOM, LIP, PIC, RAL*
 - *sites test installation and configuration*
 - Applications test by using their production software and give feedback on reliability and functionality
- **Status**
 - Documentation of process is in draft state
 - Certification Testbed
 - gLite pre-release installed
 - Preproduction Service
 - sites are installing current LCG2 release as a platform for the gLite components
 - Porting of tests and collection of existing tests (JRA1, NA4, ARDA) started

- **Certification of the middleware was the essential tool to improve its quality**
- **Early access to new releases was crucial for applications**
- **Process has to undergo evolutionary changes**
 - software matures
 - certification becomes more complex (shift to applications)
 - scale (110 sites)
 - releases with radical changes become very hard to deploy
 - usage (production)
 - some uniformity and fast spread of fixes is expected by applications
- **Preproduction Service for gLite**
 - currently building up
 - new releases have to be introduced to subsets of the sites (staged)
 - feedback from applications essential to prioritize the work