gLite Certification and Deployment Process

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Information Society

Introduction

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

Current Procedure

- 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

C&T
Certification & Testing

GDB
Grid Deployment
Board

EIS
Experiment Integration
Support

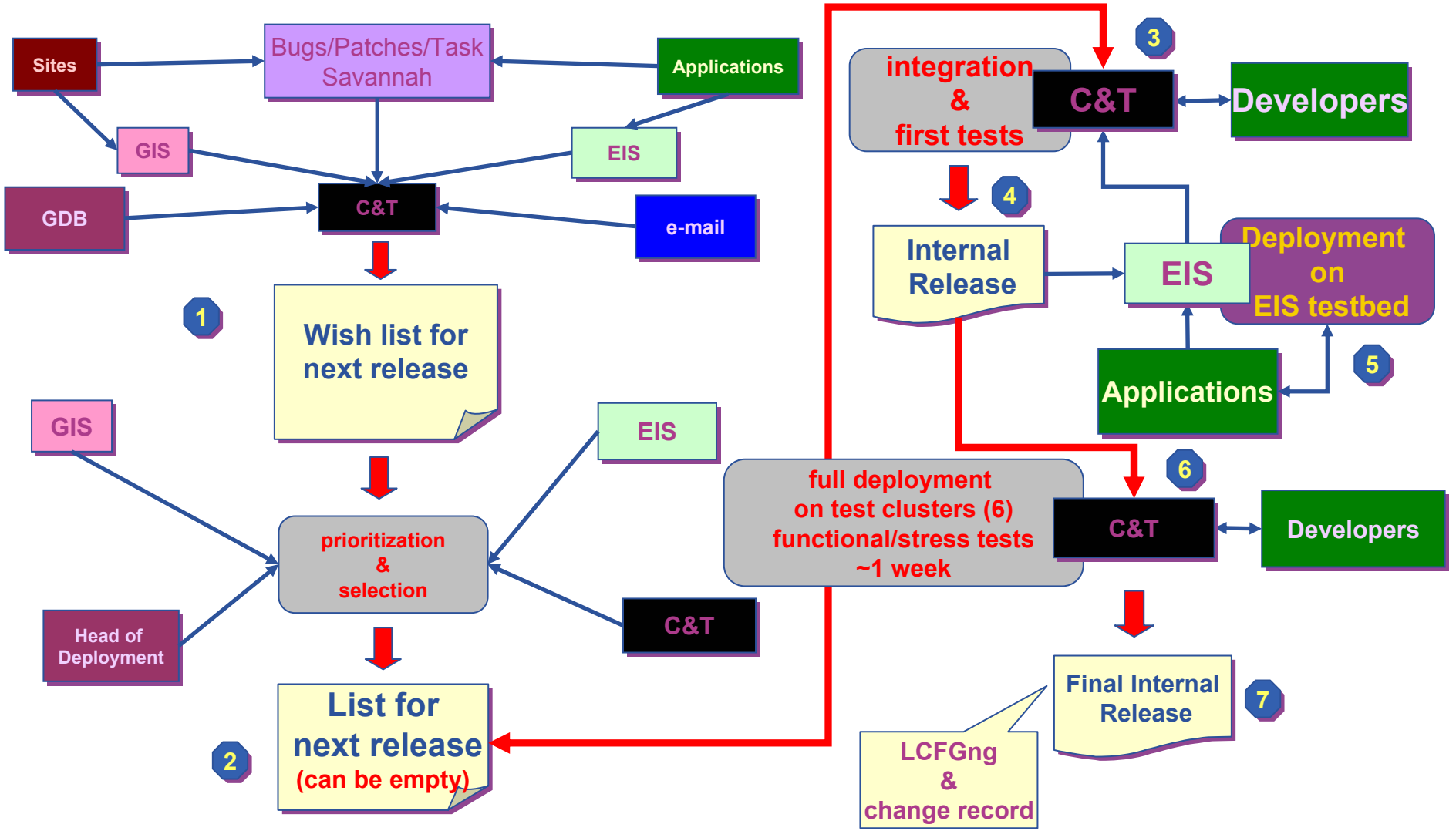
Applications

GIS
Grid Infrastructure
Support

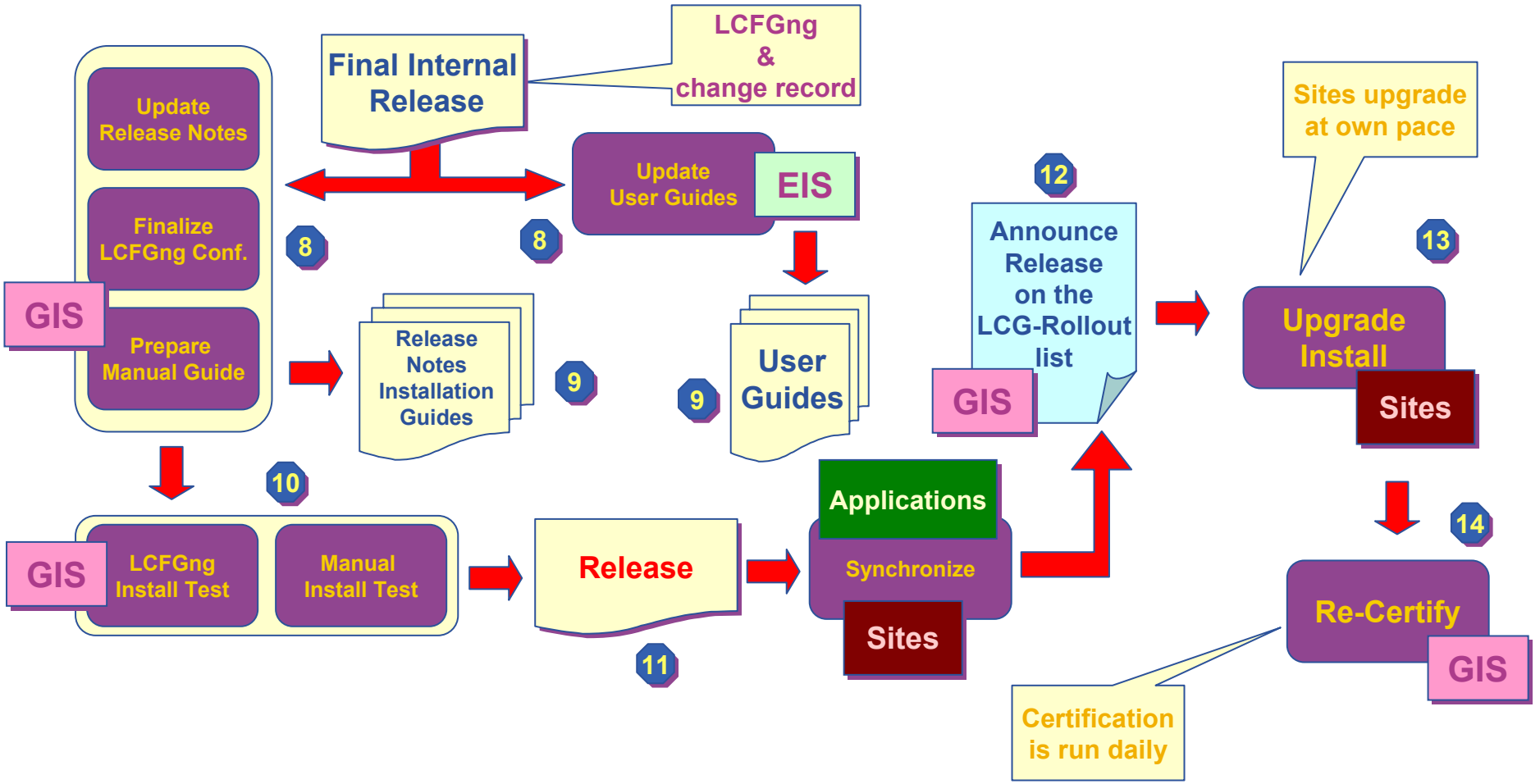
Sites

CICs ROCs

Release Preparation



Deployment


Update Release Notes
Finalize LCFGng Conf.
Prepare Manual Guide
GIS
Final Internal Release
LCFGng & change record
8
8
Update User Guides
EIS
Release Notes Installation Guides
9
9
User Guides
10
GIS
LCFGng Install Test
Manual Install Test
Release
11
Applications
Synchronize
Sites
12
Announce Release on the LCG-Rollout list
GIS
Sites upgrade at own pace
13
Upgrade Install
Sites
14
Re-Certify
GIS
Certification is run daily

Experience

- **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

Additional Input

- **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 not available for new OS versions**
- **Configuration a major problem on smaller sites**
- **Operations Workshop**
  - T2 sites can handle major upgrades only every 3 month
  - sites need to give input in the selection of new packages

- **gLite releases need to be deployed**
  - software already partially tested by JRA1
    - certification will need fewer iterations
  - preproduction service
    - replaces part of the certification process

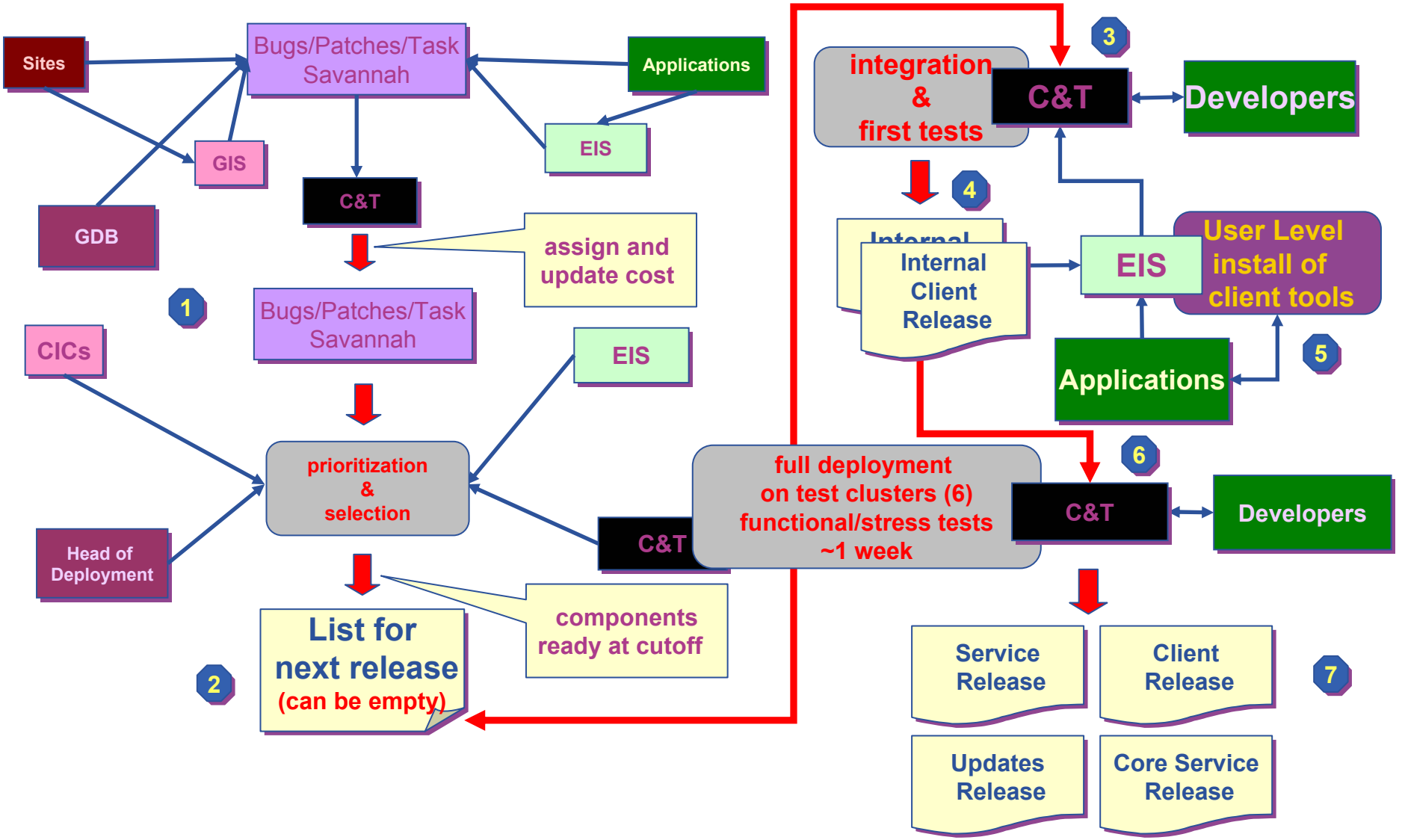
Changes I

- **Simple Installation/Configuration Scripts**
  - YAIM, semi automatic simple configuration
    - all configuration for a site are kept in one file
  - APT based installation of middleware RPMs
    - simple dependency management
    - updates (automatic on demand)
  - 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 with priorities assigned to the packages*
    - *cost to completion assigned (time of specific individual) at cut of day*
    - selection process with participation of applications, sites and deployment
    - work will continue based on priority list between releases (rolling)

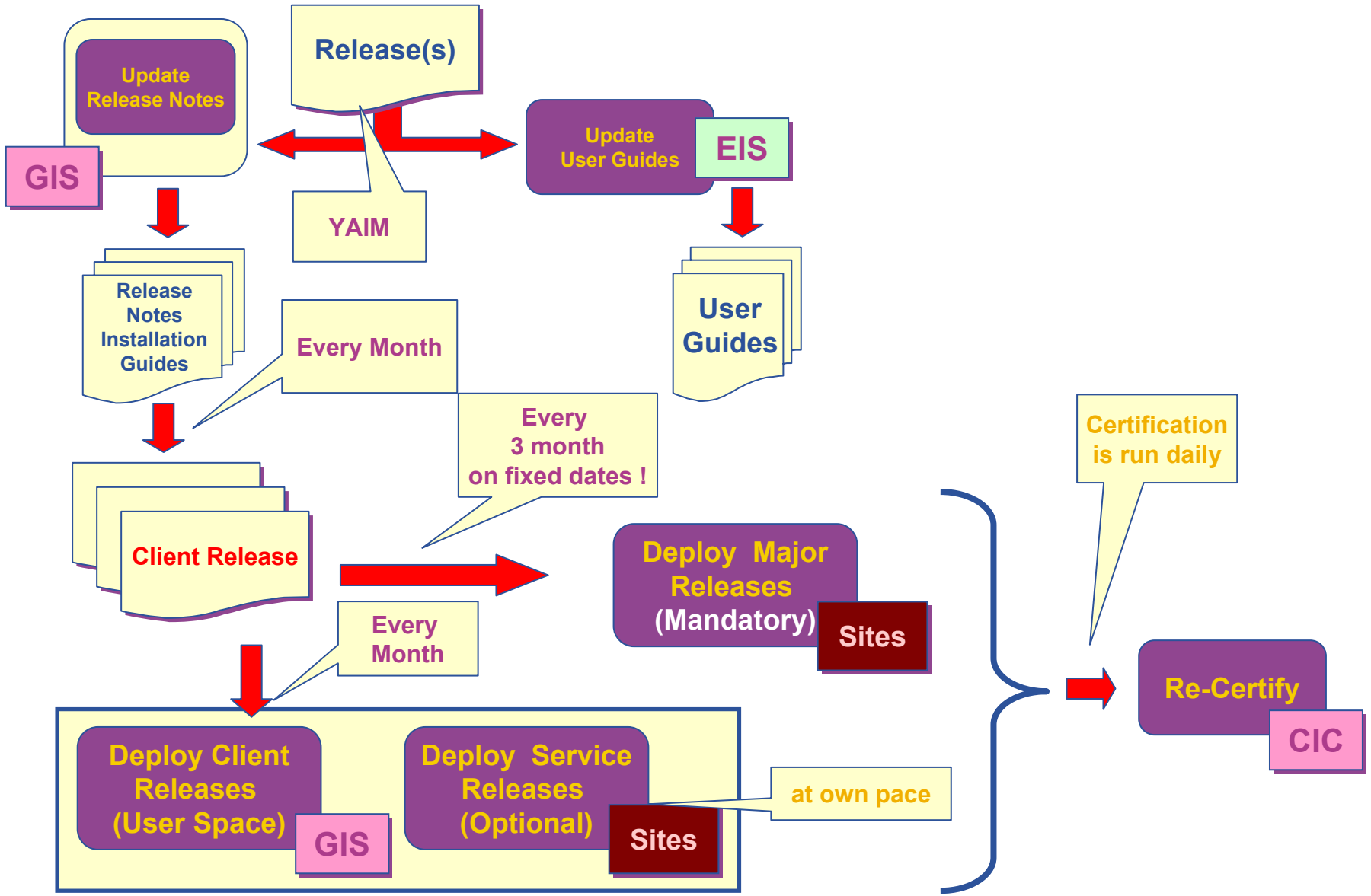
Changes II

- **different release types**
  - client libs
  - 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 T2s 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 will be installed on EIS testbed
    - **early feedback from applications**

New Process (simplified)



New Deployment



- **Differences**
  - unit and functional test already performed by JRA1
  - release cycle by JRA1
- **New Sequence**
  - Certification Testbed (CERN)
    - installation/config tests
    - rerun functional tests (to validate configuration)
    - synthetic stress tests
  - Preproduction Service
    - Sites
      - *Krakow, FZK, IN2P3, CNAF, Bolonga, Padua, Bari, NIKHEF, SNIC, Protvino-IHEp, UOM(Greece),LIP, PIC, RAL*
      - *sites test installation and configuration*
    - Applications test using their production software and give feedback on reliability and functionality
- **Status**
  - Documentation of process is in draft state
  - Certification Testbed
    - pre-release installed
  - Preproduction Service
    - sites are installibg current LCG2 release as a platform for the gLite components

Summary

- **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
    - certifcation 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