Securing the e-conomy,
We have the key.

# CC-EAL4 Certification of KeyOne v3

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SAFELAYER

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- Motivation
- Certification Scope
- Procedural improvements
- Product improvements

# Motivation

- Marketing / Management

  → EAL4+

  → CWA-14167-1

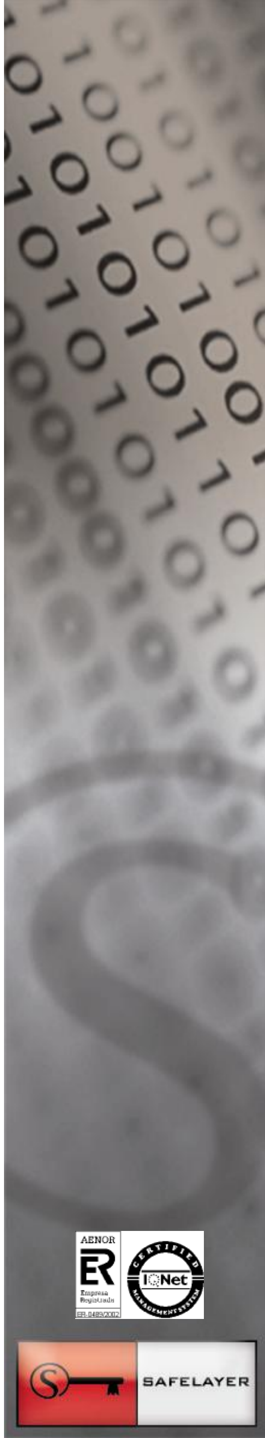
- CWA-14167-1

  → "Qualified Certificates"

- Commercial (NATO)

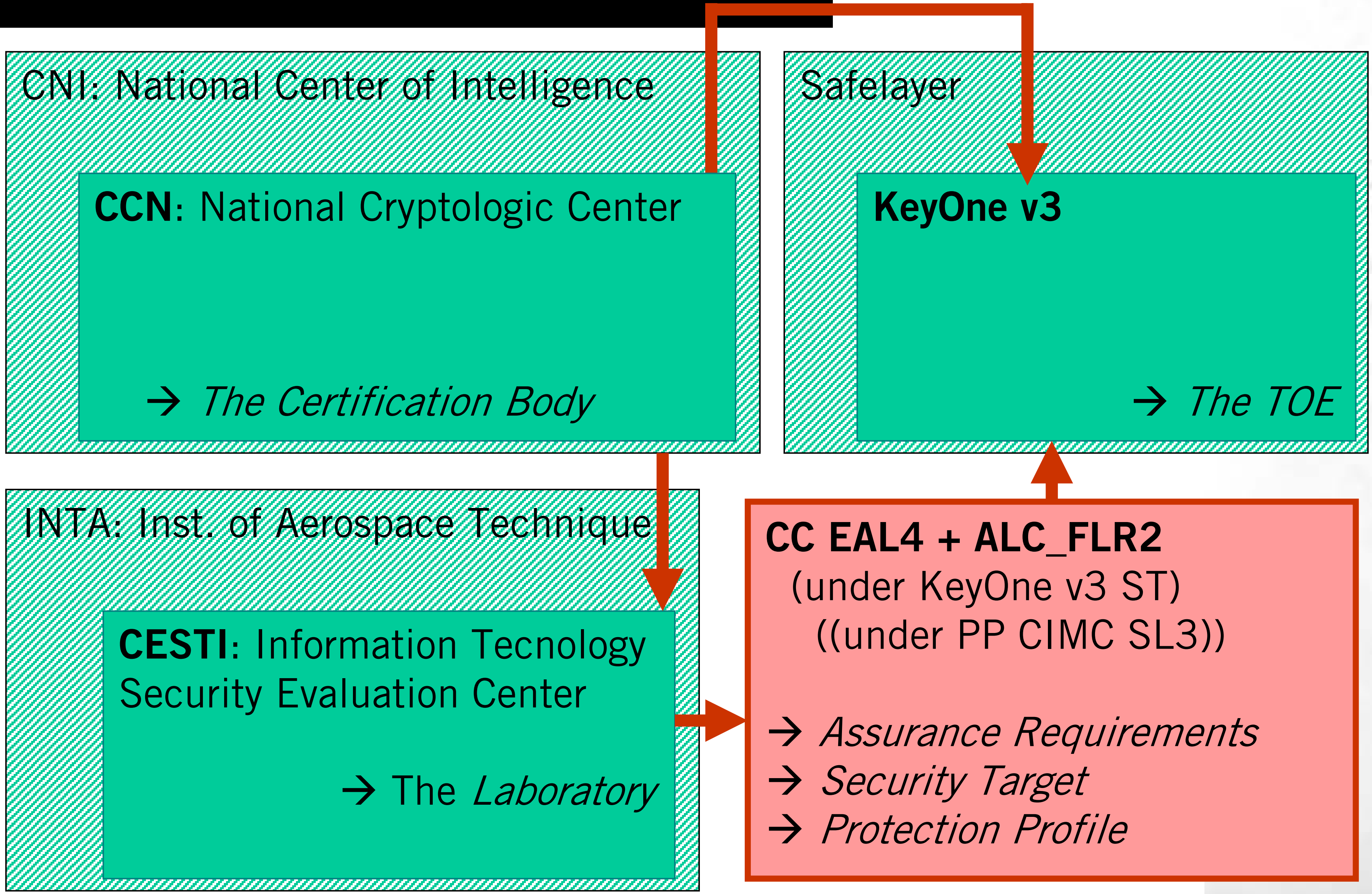
  → "CIMC"

- EAL4+ under PP-CIMC-SL3
  - Approach similar to CWA-14167-1



# CERTIFICATION SCOPE

# Process



CNI: National Center of Intelligence

**CCN**: National Cryptologic Center

→ *The Certification Body*

Safelayer

**KeyOne v3**

→ *The TOE*

INTA: Inst. of Aerospace Technique

**CESTI**: Information Tecnology Security Evaluation Center

→ The *Laboratory*

**CC EAL4 + ALC_FLR2**
(under KeyOne v3 ST)
((under PP CIMC SL3))

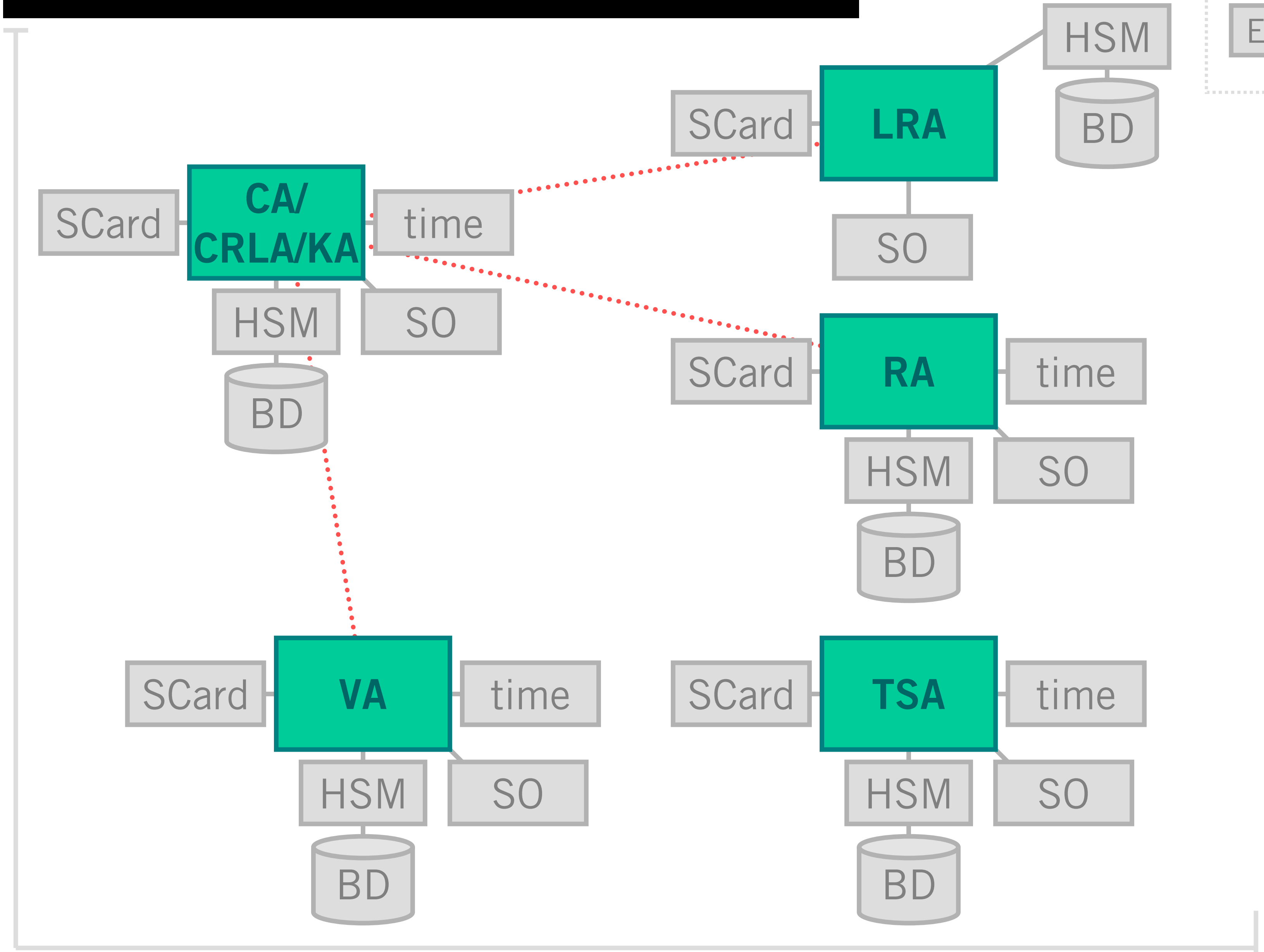
→ *Assurance Requirements*
→ *Security Target*
→ *Protection Profile*

# Certification Scope

- TOE: KeyOne® 3.0 (3.0.04S2R1)
  - PP: Certificate Issuing and Management Components(CIMC), Security Level 3
  - Assurance Requirements for the CC EAL4 plus ALC_FLR.2

- TOE: *subsystems that provide specific functionalities of a PKI, managing certificates for the support of electronic signature*

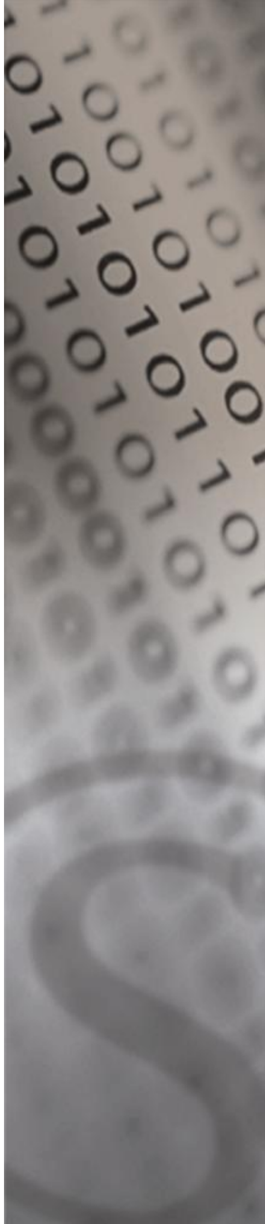
# Certified Products

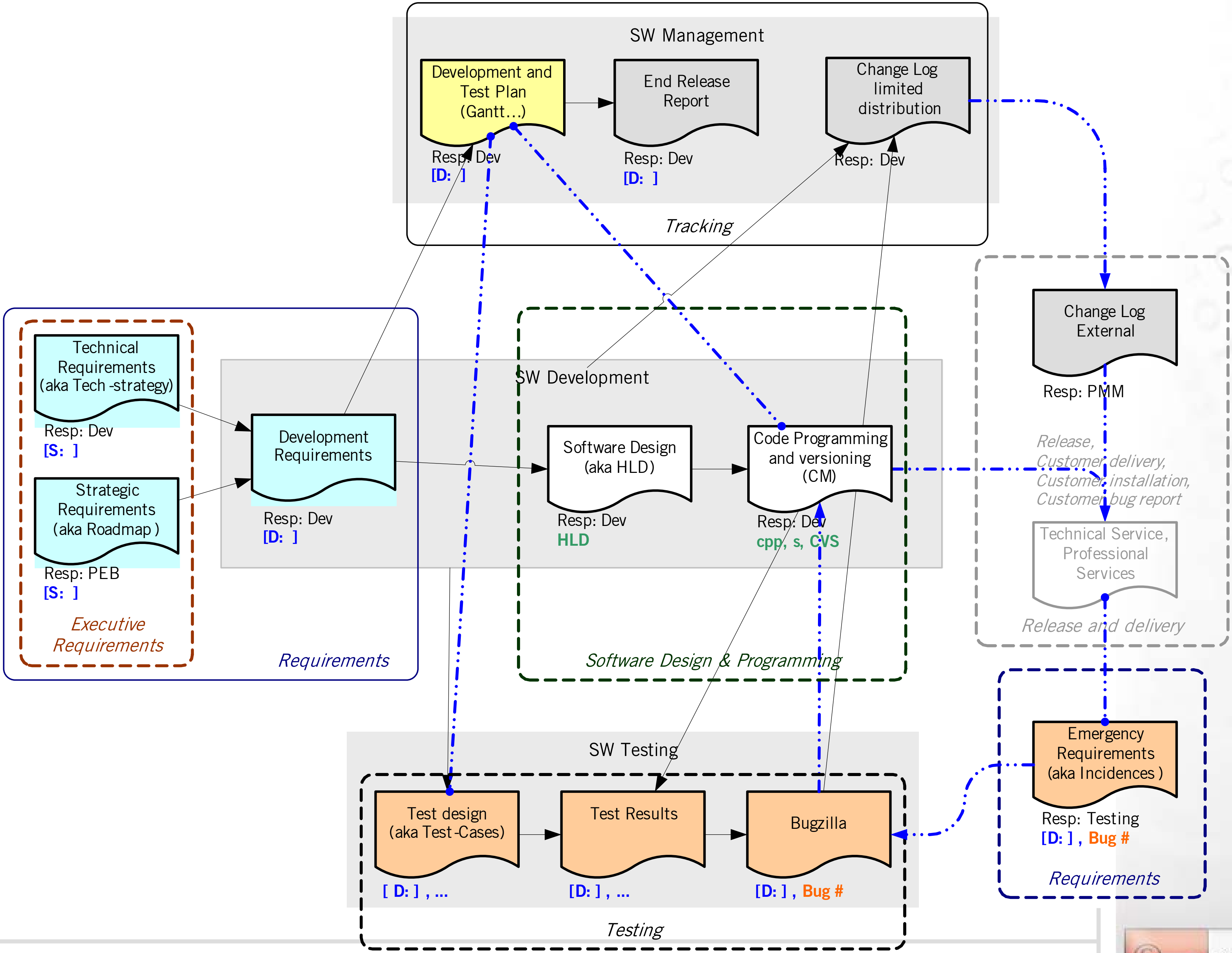


# Procedural improvements

# Development Process

- This system consists of the integration of different tools in a single system
  - Use of labels ( [Project:], [Release:], [S:], [D:], ...)
  - **ATR**$^{SFLY}$, traceability of requirements, planning and tracking
    - Graphic view of executive requirements S:
    - Graphic view of the product architecture
    - Accounting (resources, hours)
    - Tests cases under requirements D:
  - Meeting minute $^{LOTUS/SFLY}$ related to requirements
  - Electronic mail / Design Forum $^{LOTUS}$
    - threads of discussion related to requirements
  - **CVS**$^{GNU}$, implementation of requirements
  - **Documental server**$^{SFLY}$ : versioned and publication of documents
  - **Bugzilla**$^{GNU}$, against requirements





SW Management

Development and Test Plan (Gantt…)
Resp: Dev
[D: ]

End Release Report
Resp: Dev
[D: ]

Change Log limited distribution
Resp: Dev

*Tracking*

Technical Requirements (aka Tech-strategy)
Resp: Dev
[S: ]

Strategic Requirements (aka Roadmap)
Resp: PEB
[S: ]

*Executive Requirements*

Development Requirements
Resp: Dev
[D: ]

*Requirements*

SW Development

Software Design (aka HLD)
Resp: Dev
HLD

Code Programming and versioning (CM)
Resp: Dev
cpp, s, CVS

*Software Design & Programming*

Change Log External
Resp: PMM

*Release, Customer delivery, Customer installation, Customer bug report*

Technical Service, Professional Services

*Release and delivery*

SW Testing

Test design (aka Test-Cases)
[ D: ] , …

Test Results
[D: ] , …

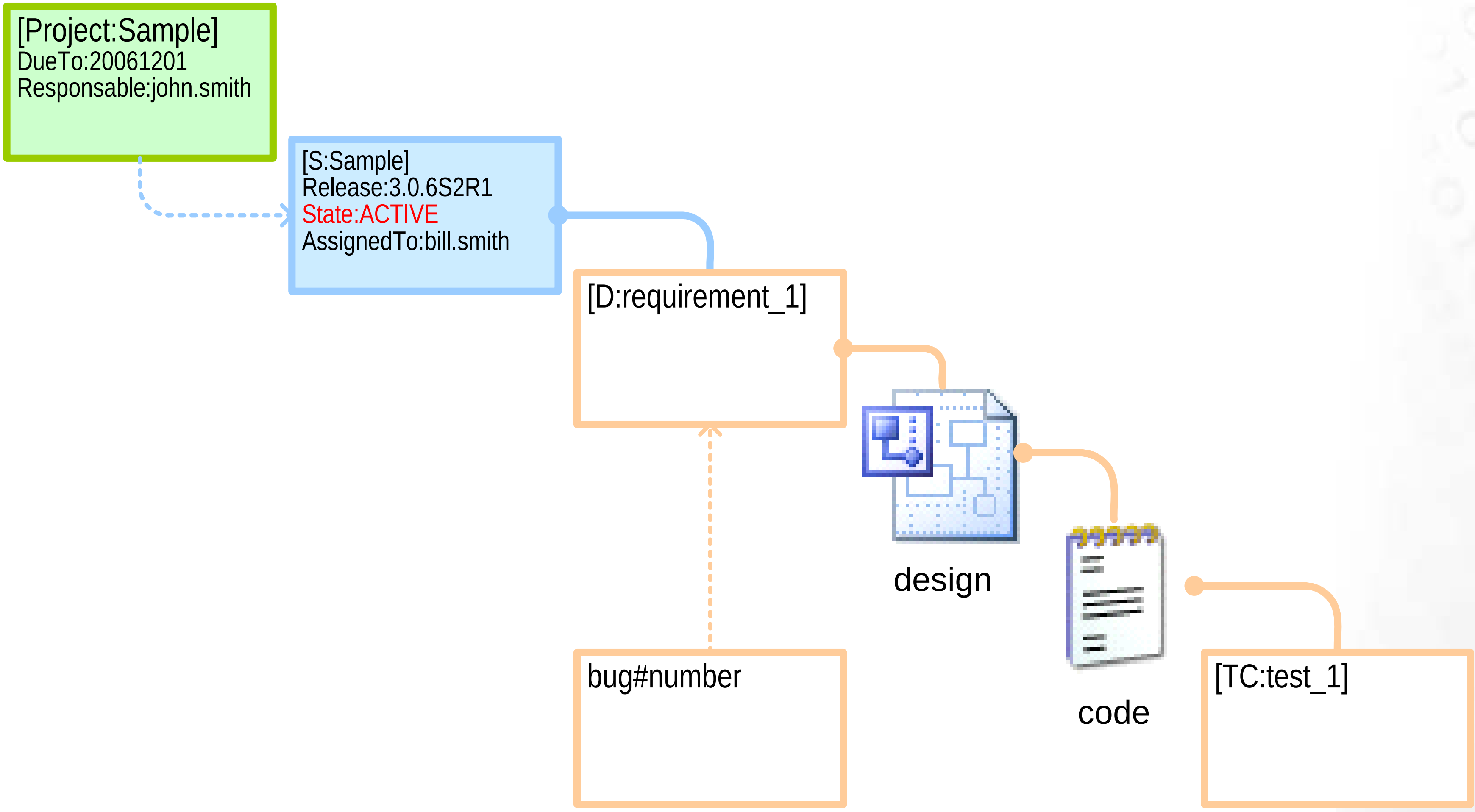
Bugzilla
[D: ] , Bug #

*Testing*

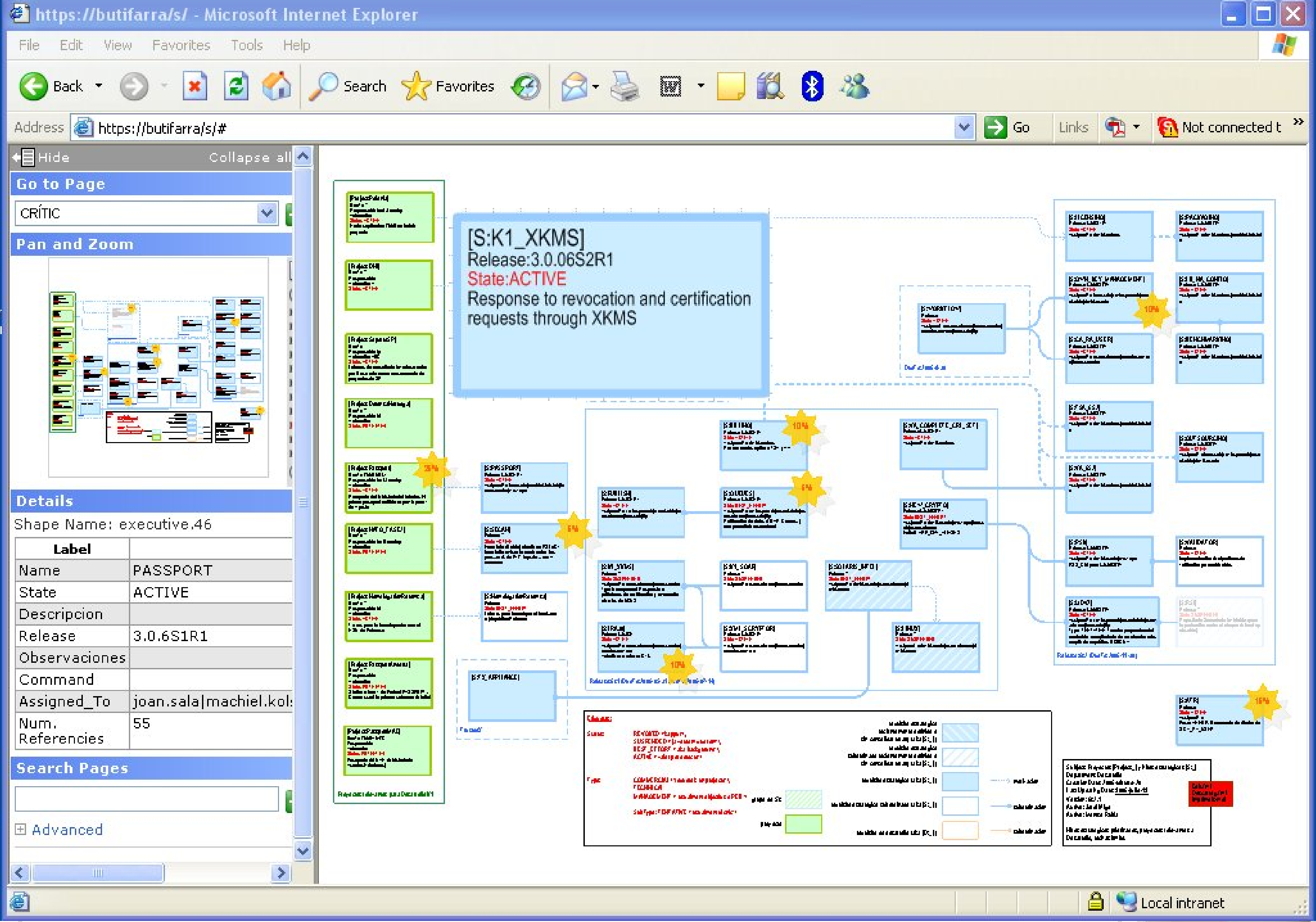
Emergency Requirements (aka Incidences)
Resp: Testing
[D: ] , Bug #

*Requirements*

# Implementation of Traceability



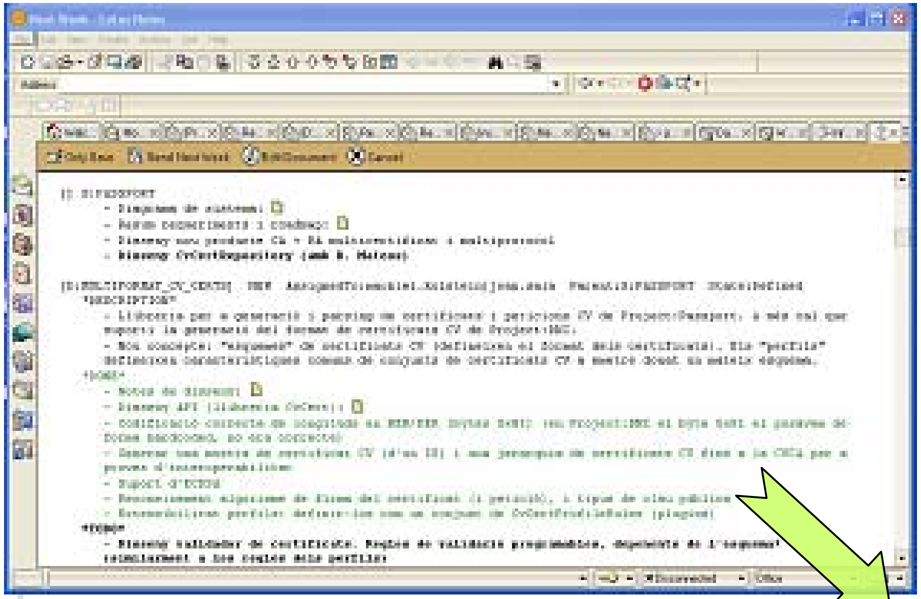
time →



Shape Name: executive.46

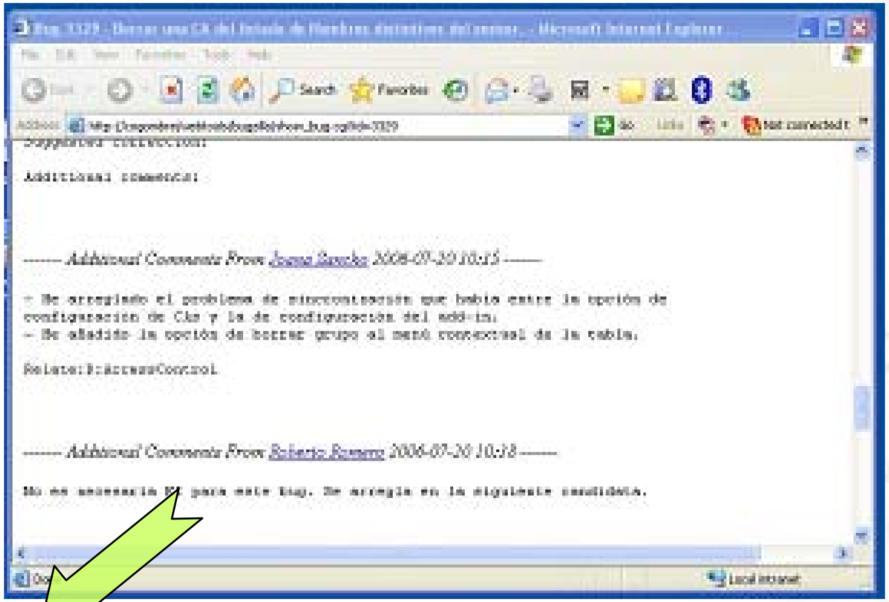
| Label | |
|---|---|
| Name | PASSPORT |
| State | ACTIVE |
| Descripcion | |
| Release | 3.0.6S1R1 |
| Observaciones | |
| Command | |
| Assigned_To | joan.sala\|machiel.kol: |
| Num. Referencies | 55 |

[S:K1_XKMS]
Release:3.0.06S2R1
State:ACTIVE
Response to revocation and certification requests through XKMS



[illegible]

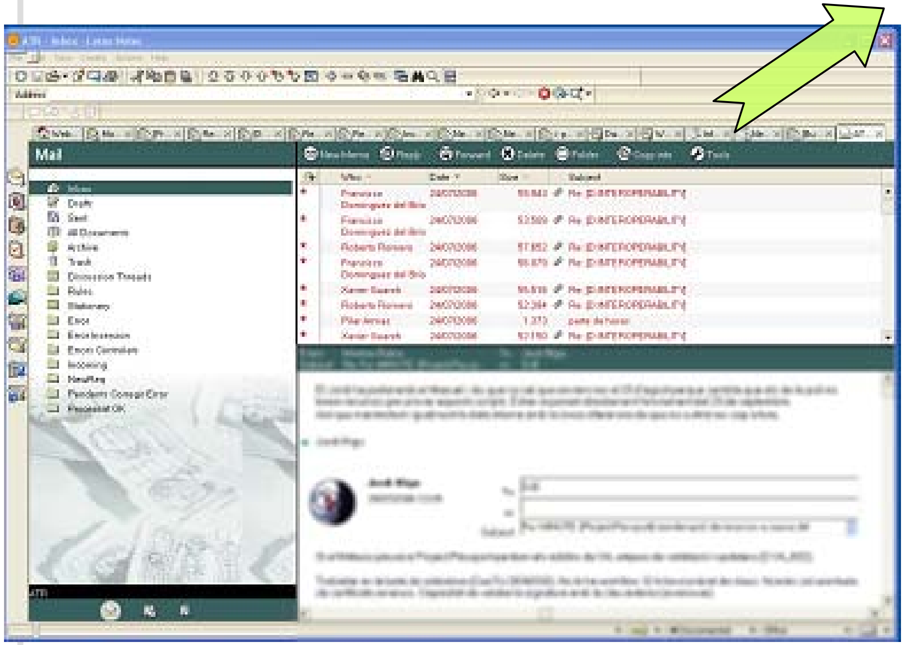
Next Week



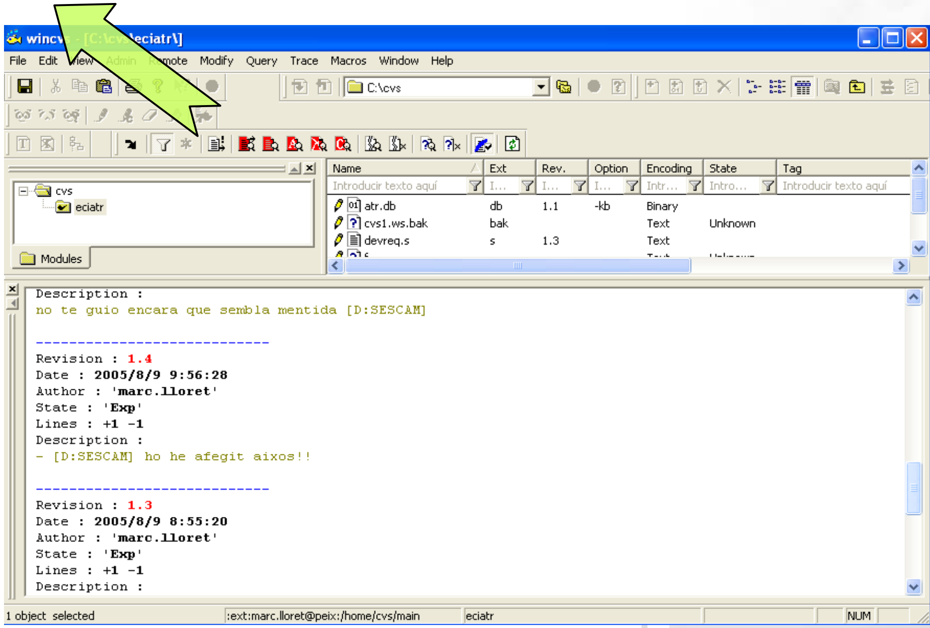
```
Additional comments:


------ Additional Comments From Juana Sancho 2006-07-20 10:15 ------

- Se arreglado el problema de sincronización que había entre la opción de
configuración de CAs y la de configuración del add-in.
- Se añadido la opción de borrar grupo al menú contextual de la tabla.

Relate:P:AccessControl


------ Additional Comments From Roberto Romero 2006-07-20 10:18 ------

No es necesaria NC para este bug. Se arregla en la siguiente candidata.
```

Bugzilla

ATR



Internal E-mails



| Name | Ext | Rev. | Option | Encoding | State | Tag |
|---|---|---|---|---|---|---|
| atr.db | db | 1.1 | -kb | Binary | | |
| cvs1.ws.bak | bak | | | Text | Unknown | |
| devreq.s | s | 1.3 | | Text | | |

```
Description :
no te guio encara que sembla mentida [D:SESCAM]

----------------------------
Revision : 1.4
Date : 2005/8/9 9:56:28
Author : 'marc.lloret'
State : 'Exp'
Lines : +1 -1
Description :
- [D:SESCAM] ho he afegit aixos!!

----------------------------
Revision : 1.3
Date : 2005/8/9 8:55:20
Author : 'marc.lloret'
State : 'Exp'
Lines : +1 -1
Description :
```

1 object selected :ext:marc.lloret@peix:/home/cvs/main eciatr NUM

CVS

# Improvements in configuration management

ACM:Config Management
ADO:Delivery & Operation

- TOE implementation representation
  - Automated versioning tools for:
    - Document Server: versions, changes, author, modification data, rôles (editors, readers, reviewers), status of the document and changes notifications, logs
    - CVS: versions, changes, author, modification data, rôles, logs
  - Better info access control
    - Documental Server: PKI
    - CVS: PKI
- List of configuration items (MPI)
  - Changes of the current MPI (Master Product Index): Implementation representation, security flaws, evaluation evidence required by the assurance components

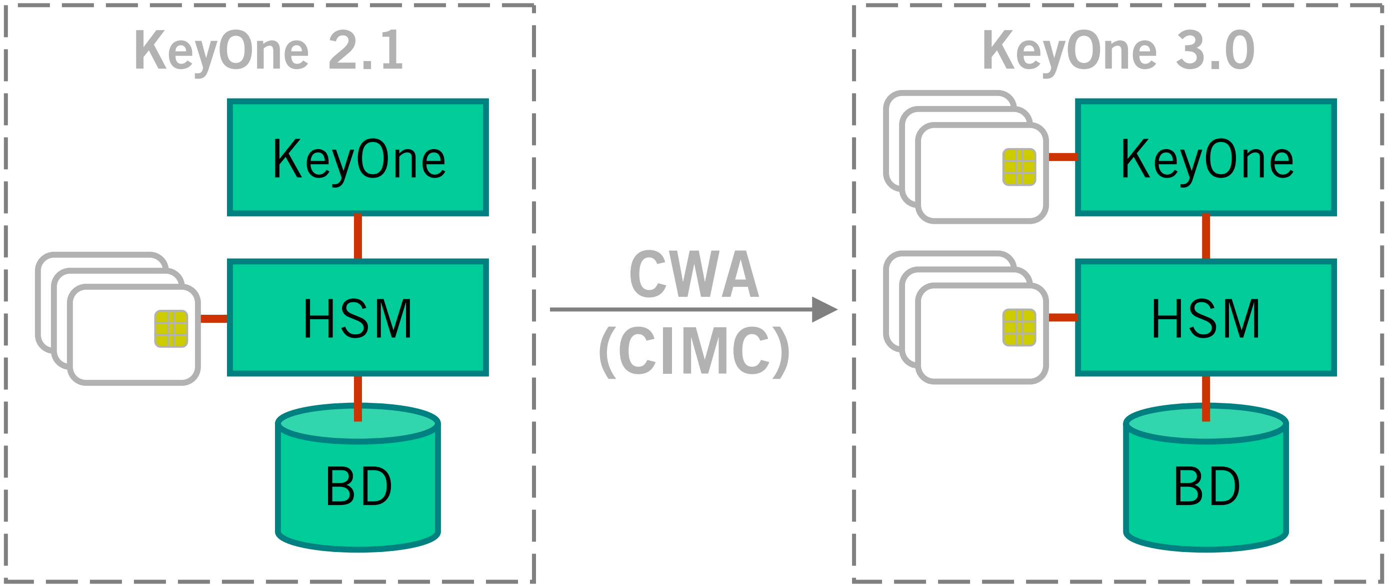
# Improvements on Life Cycle management

- Flaws are corrected and the correction issued to TOE users
  - Improvement of the management of bugs
  - New development rôles
  - Controls and new procedures in the bug resolving process
- Confidentiality and integrity of the TOE design and implementation
  - Improved access control, rôles and logs in CVS and Documental Server

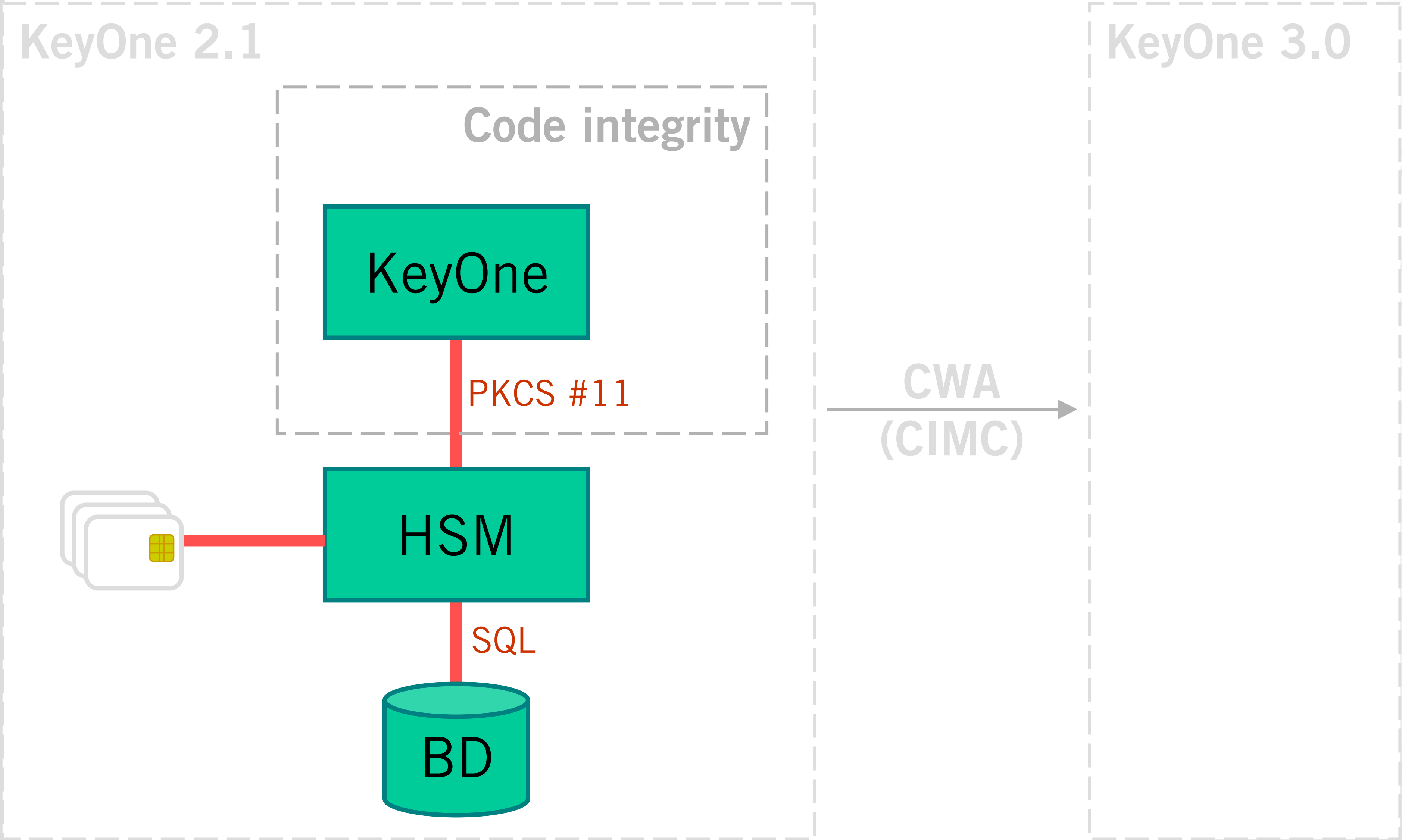
# Product Improvements

# Access Control

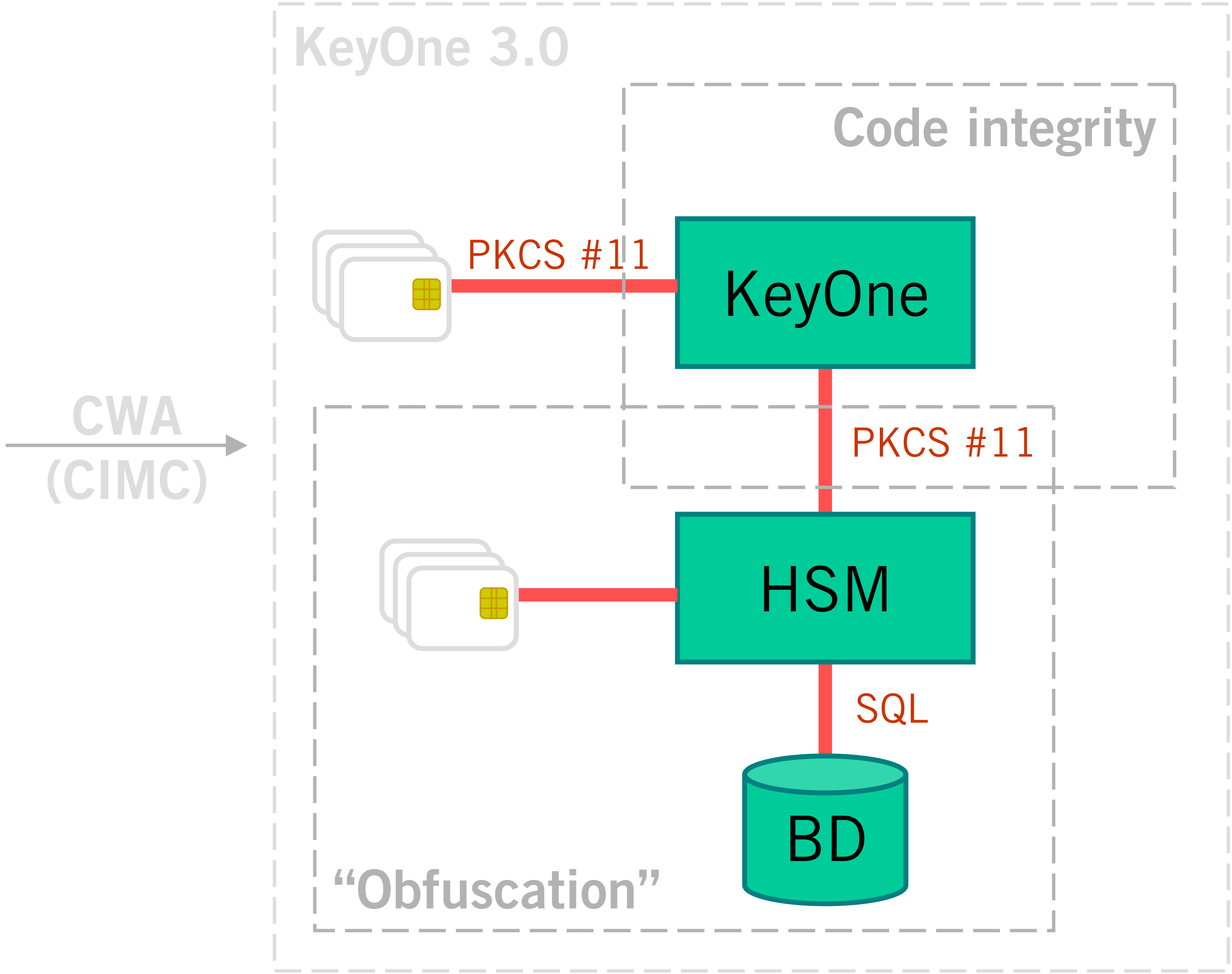
- CWA-14167-1 // CIMC-PP
  - From 2.1: *Security based on sharing the property of keys*
  - To 3.0: *Security based on access control to the system*



# Acceso Control [2.1→...]



# Access Control [...→3.0]



# Access Control

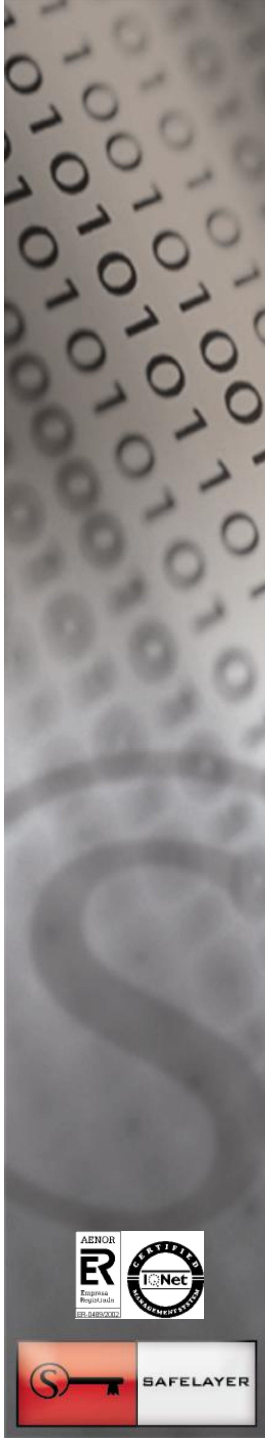
Users → Groups

Application → Actions → Rôles

- Security policy
  - Definition of rôles (actions list)
  - Incompatibilities among rôles
- Available policies
  - PP CIMC SL3 (certificate CC-EAL4+)
  - CWA-14167-1
  - Possibility of ad-hoc development

# Rôles

- PP CIMC SL3
  - Administrator
  - Officer
  - Auditor
- CWA-14167-1
  - Security Officer
  - System Administrator
  - System Operator
  - System Auditor
  - Registration Officer



# Logs Integrity

- 2.1: Full Database Integrity
  - Digital Signature (PKI)
- 3.0: Full Database Integrity
  - Digital Signature (PKI)
  - Transactional Integrity
  - Fault-tolerant integrity

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