A proposal for certificate validity

Certification Body - Spain.

14th International Common Criteria Conference.

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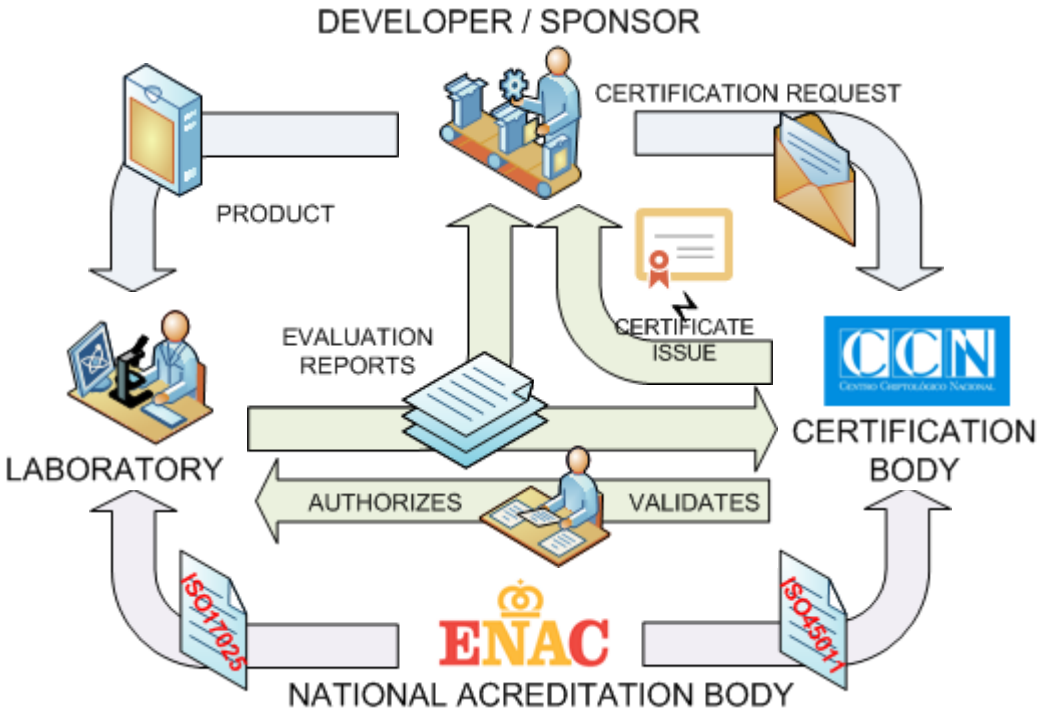
Outline

- After the certification
- The Spanish CB experience
- Studying a new certificate validity policy
- Several possible CB services

The Certification Process

- Begins with a Sponsor willing to have his product certified…



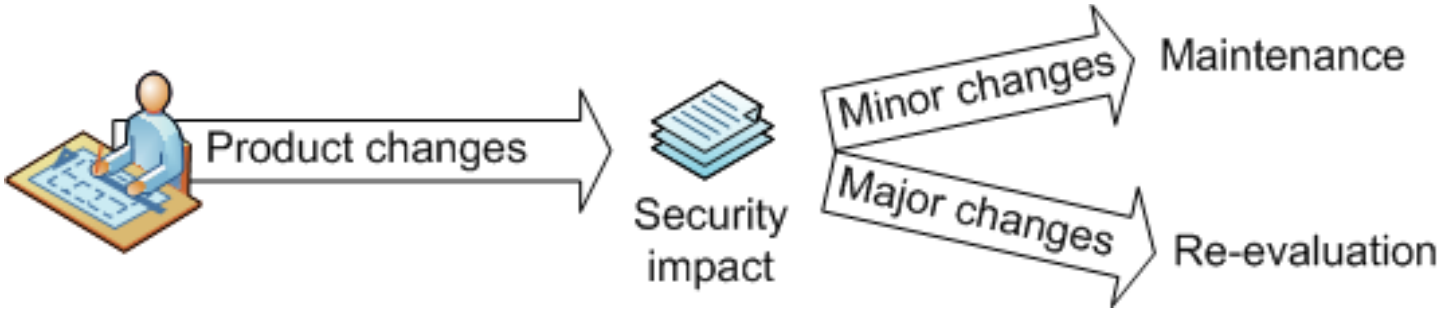
- …and finish with the issue of a certificate.

After the issuance

- On the Arrangement:
  - *Certificate recognition and exceptions*
  - *Publication of certificate and report*
  - *Use of the CCRA logo*
- Supporting documents
  - *Assurance continuity*

Assurance Continuity

- Changes in the certified product



- *Maintenance:*
  - *Addendum to the certificate*
    - *Publication of Maintenance Report*
- Re-evaluation
  - New evaluation using results of previous evaluation
    - *New certificate (and Certificate Report)*

Assurance Continuity (supplement)

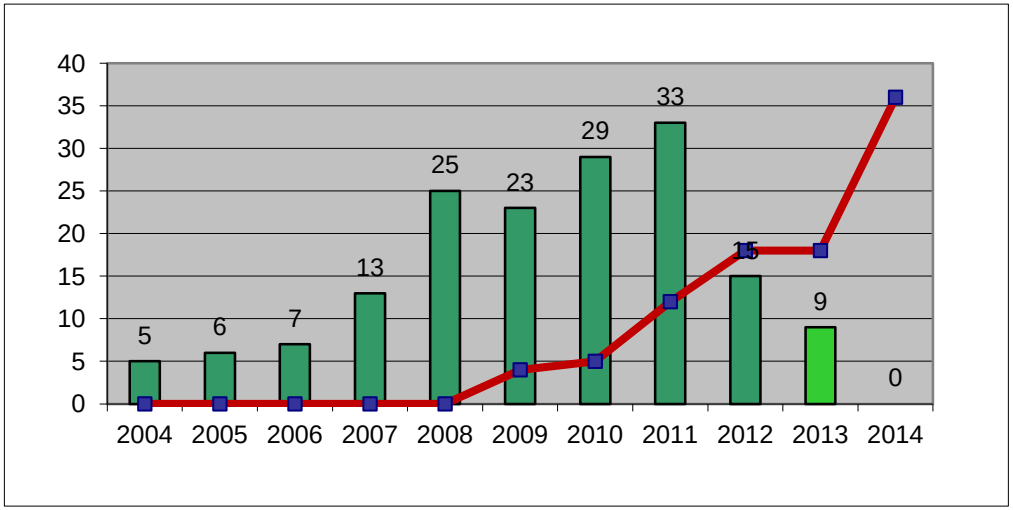
- Another important point: the changes in the state of the art
  - *The risk of new vulnerabilities arising in each technology area increases with time*
  - *Maintaining information security assurance*
- It's a CB task to develop its own complete *Certificate Validity Policy*

Spanish CB experience

- Legislation
  - *Presidential Order 2740/2007, September 19th:*
  - *Regulation of the National Scheme for Evaluation and Certification on Information Technology Security*
    - *Certificates will never expire. It will remain valid if there is no change in the conditions that cause its issuance.*
    - *Every two years, the CB will open a new dossier to review the validity of the certificate.*
      - *Changes in technology or state of the art*

Spanish CB experience

- Consequences
  - *Administrative time consuming*
  - *Reviews made by certifiers not as deep as desired*
  - *Geometric progression of new reviews*



New Certifications + Maintenances vs Reviews of validity

A change is mandatory!

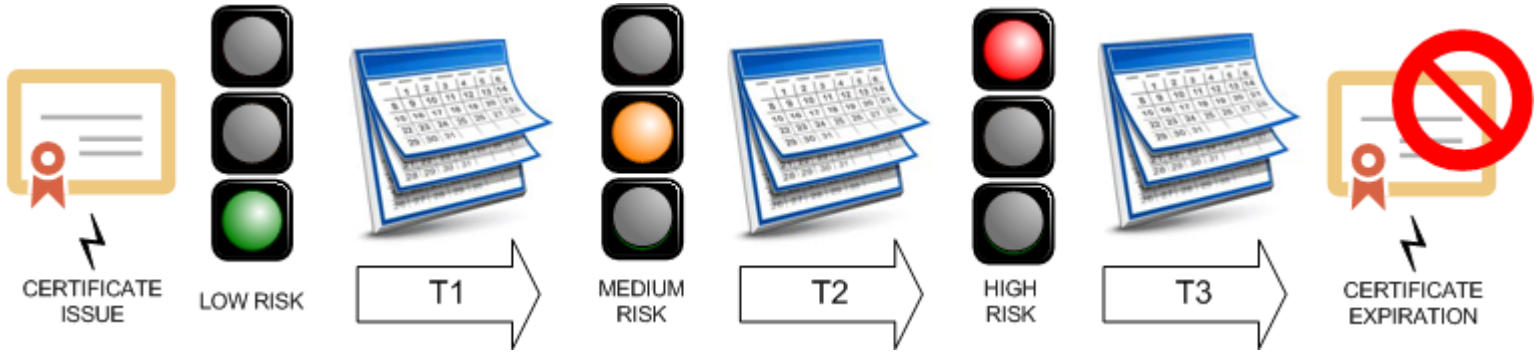
Present Certificate Validity Policy

- Points to change
  - *A certificate cannot be valid forever. They get older to deal with the new security state of the art.*
  - *Customers should have an easy way to know the health of a certificate in order to plan their procurement.*
  - *The health of a certificate could be check to know if it keeps fit*
  - *Some vulnerabilities could appear that call the certificate into question.*

New Certificate Validity Proposal

- Key points
  - *The certificates must have a period of validity*
  - *This period is divided into 3 risk levels for consuming the certificate (low, medium and high)*
  - *Reassessments can extend the period of validity (resetting it to low risk)*
  - *Known vulnerabilities will shorten that period (moving it to high risk)*

Certificate period of validity

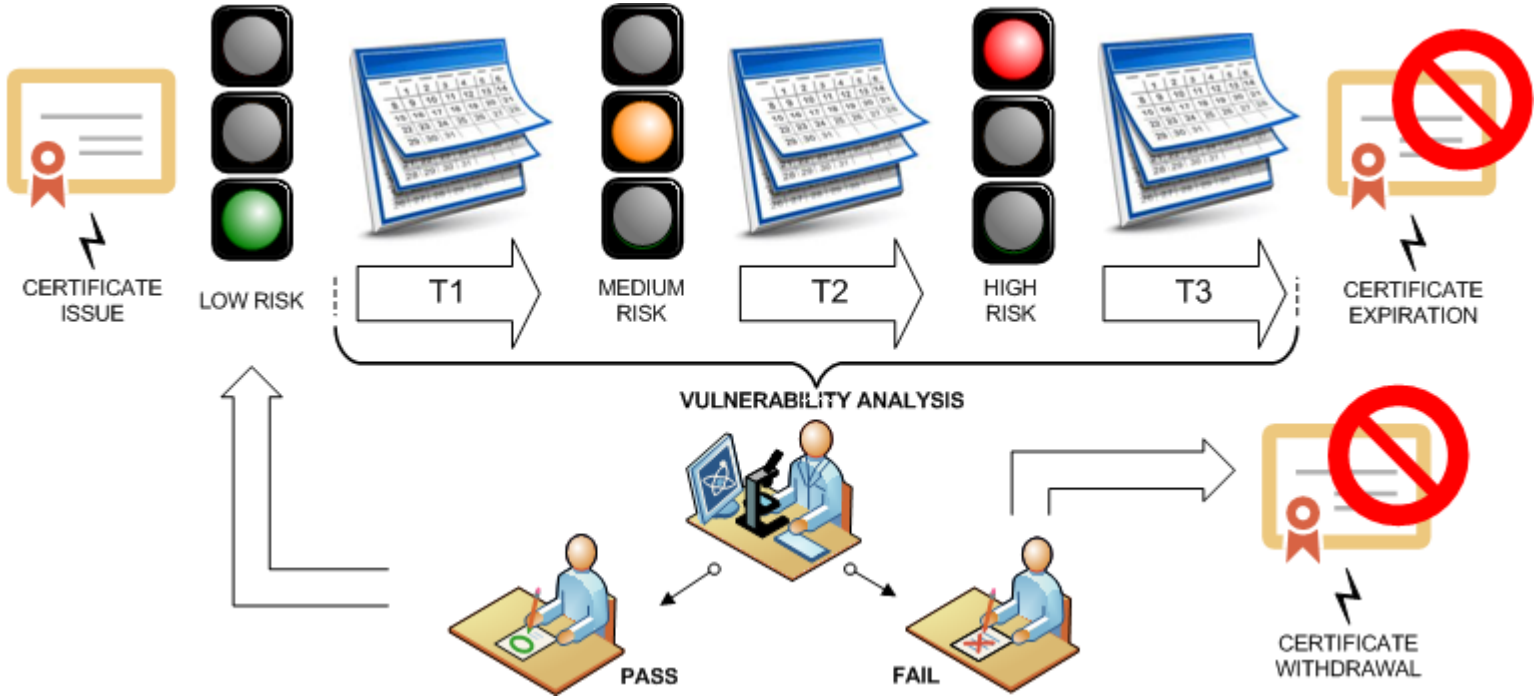


- **T1**: Low risk
  - *Probably resistant to the existing vulnerabilities*
- **T2**: Medium risk
  - *Could be affected by some new vulnerability*
- **T3**: High risk
  - *Not recommended, re-assessment needed*

Certificate period of validity

- Time periods
  - *Could be defined different for different technologies*
    - The rate of appearance of new vulnerabilities is different between different technologies
  - *As a first approach they could be:*
    - T1: 3 years, T2: 2 years and T3: 1 year
- Limit of validity will end with zombie certificates
- On the web site it could be published the initial expiration date and its risk level

Certificate Reassesment

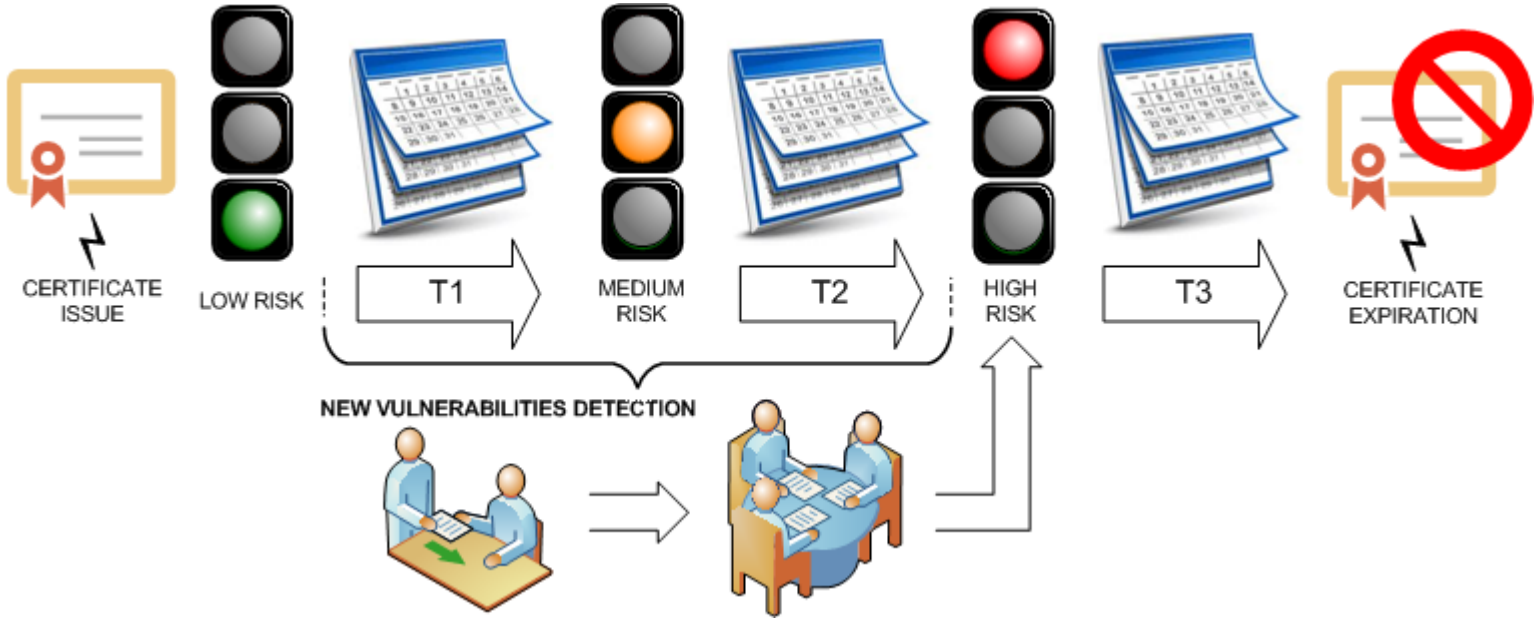


- Verification of the technical validity of AVA according to the state of the art and related to the scope of the ST.
- Before certificate expiration it is possible to reset the risk counter by passing a reassessment.

Certificate Reassesment

- Is a CB service that have to be requested
- The Evaluation Facility will perform the vulnerability analysis
- At the end of a successful reassessment a report will be written and an addendum published on the web
- An unsuccessful reassessment will lead to the withdrawal of the certificate
- If an update of the product is presented solving its security problems it could follow the assurance continuity re-evaluation process

New vulnerabilities

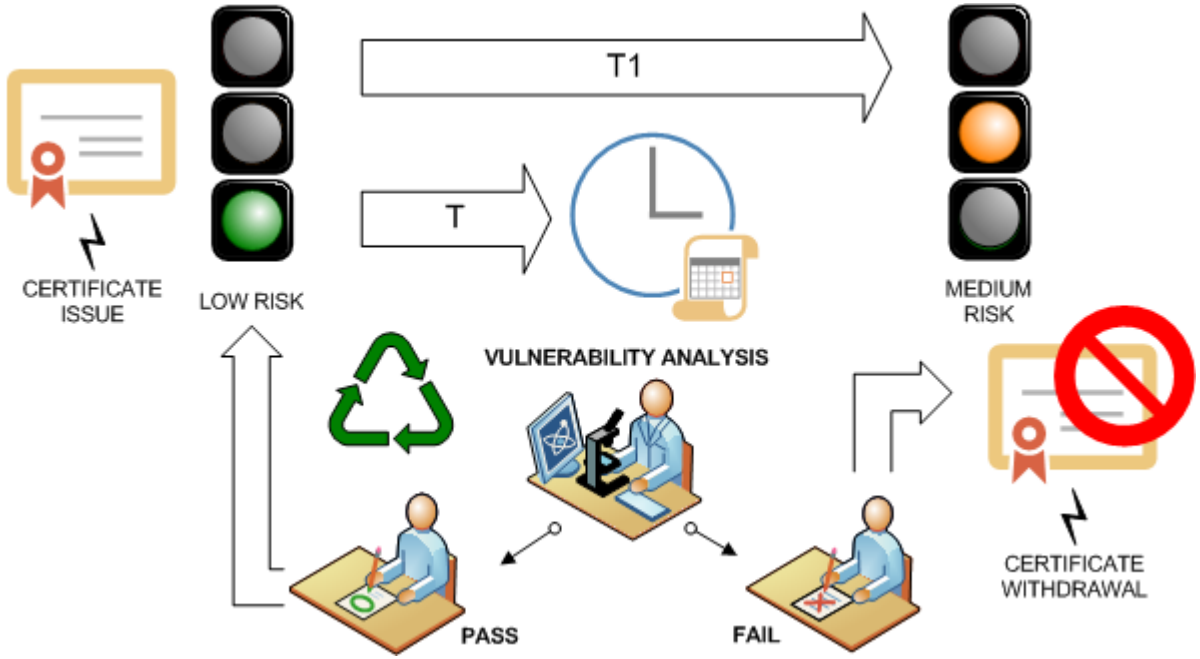


- During Low and Medium risk time new vulnerabilities could be discovered.
- If the vulnerability has high possibilities of affecting the certificate's validity it moves it to the high risk level.

New vulnerabilities

- The discovery of new vulnerabilities could come from different sources:
  - *The CB on its day to day work*
  - *Communication from outside (evaluation facilities, other schemes...)*
- *A careful analysis is needed to forecast that a vulnerability could affect a product's security*
  - *Meeting with the lab to assess the impact*
  - *If it is the decision, inform the sponsor and change the risk status*

Certificate Surveillance

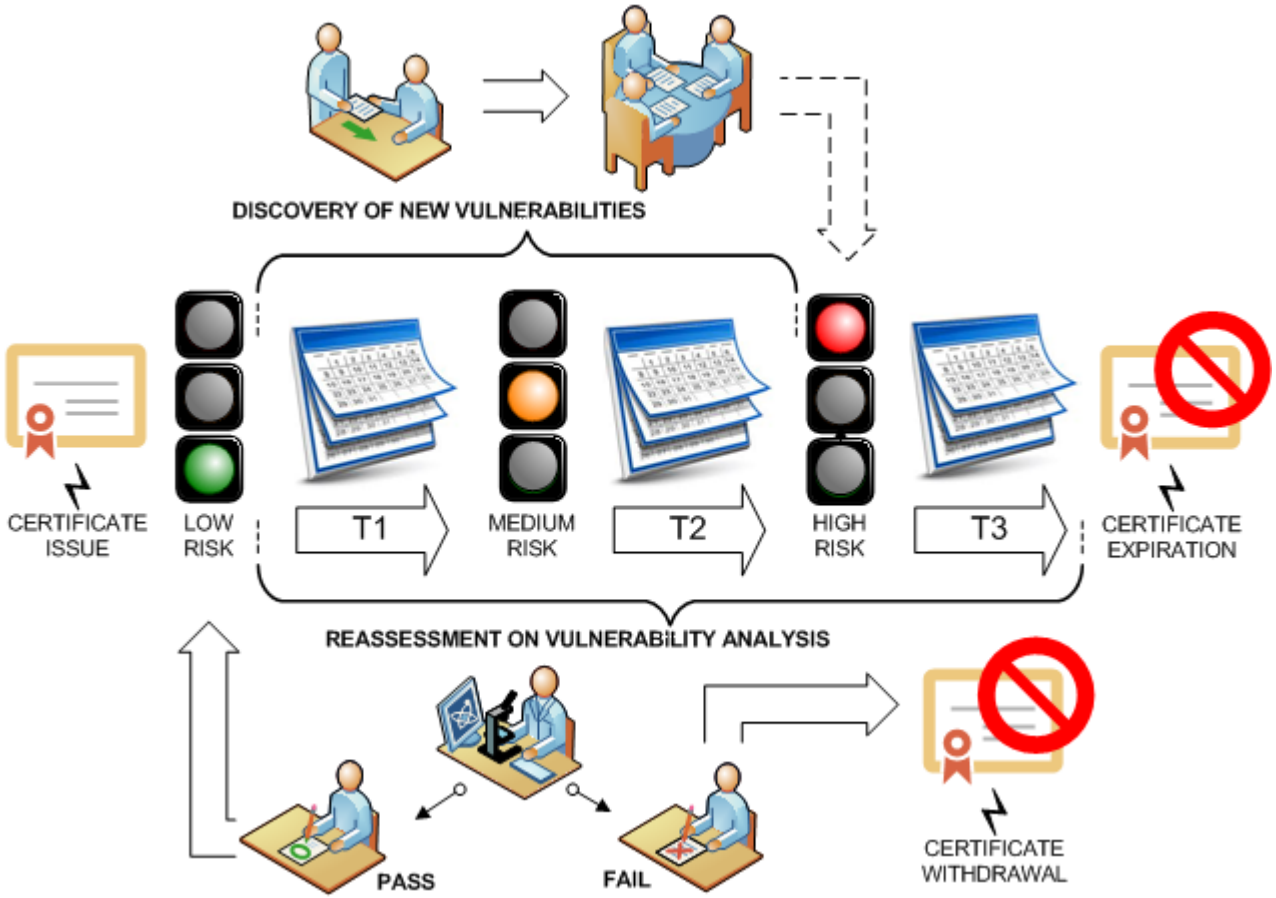


- Optional service for critical products
- Periodic reassessment intended to keep the certificate in a low risk level

Certificate Surveillance

- It's also a CB service that have to be requested
- The evaluation facility in charge of the surveillance makes an active search for new vulnerabilities and attacks that could affect the product
- At the end of every successful reassessment a report will be written and an addendum published on the web
- On the web site, the certificate could have a special mark to show that it is under a surveillance service

Assurance continuity II – Changes in the state of the art



Assurance Continuity (the two aspects)

- How changes in the product affect the new proposal regarding the changes in the state of the art?
  - *Maintenance: Same certificate with addendum*
    - *Expiration date doesn't change*
  - *Re-evaluation: 2 certificates*
    - *New certificate has its new own expiration date*

Certificate recognition

- Every CB has its own and different certificate validity policy
- And different services (reassessment, surveillance…) with different names
- The CC portal recently moves to archive several certificates (expired, withdrawn or simply old?)
- Confusing for customers
- Makes difficulties for procurement
- A harmonized certificate recognition validity is desired

Conclusions

- The CBs must offer a better supervision of their certificates
- The risk levels and the rules to move between give life to the certificates
- The laboratories will contribute in keeping the certificate status
- The developer will know the resistance of their products
- The consumers will be able to do a better procurement plan based on a more accurate risk analysis.

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