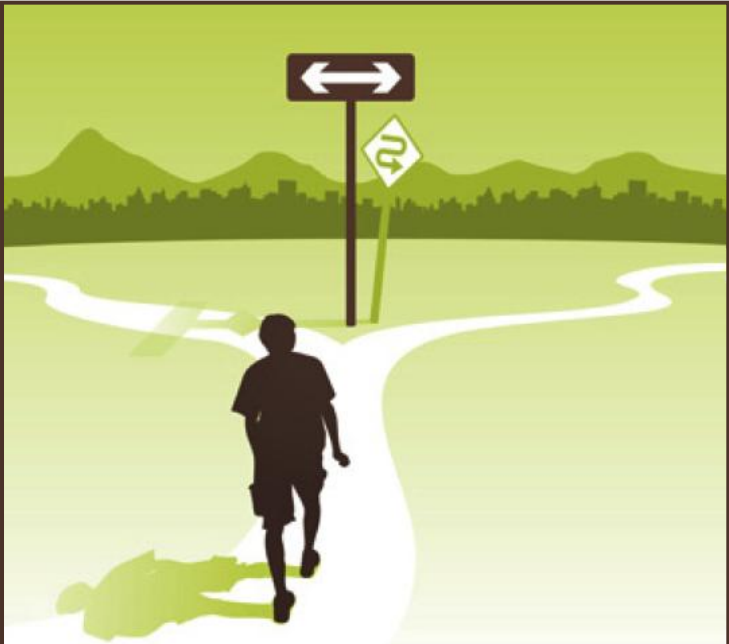


Standardisation and Certification in the Area of CBRNE - CREATIF WP4

C
B
R
N
E



Sensor Systems and Devices



**A Road Map for a
European Certification System
for CBRNE
Sensor Systems and Devices**

J. Beckmann¹, R. Schmidt, A. Berndt, U. Ewert, F. Streb²,

¹Federal Institute of Materials Research and Testing, Berlin, Germany

²Seibersdorf Labor GmbH, Seibersdorf, Austria

- ① European Union Counter-Terrorism Strategy/ CBRNE Action Plan
- ① EU Security Label
- ① Strategy for Developing an European Certification Concept for CBRNE
- ① Conclusion
- ① Outlook

CHEMICAL, BIOLOGICAL, RADIOLOGICAL AND NUCLEAR SECURITY IN THE EUROPEAN UNION (2009)

“COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL
on Strengthening Chemical, Biological, Radiological and Nuclear Security in the European Union
– an EU CBRN Action Plan” (http://ec.europa.eu/justice_home/news/summary/docs/com_2009_0273_en.pdf)

EU Counter- Terrorism Strategy,
three main areas of CBRN security work has been defined:

Prevention:

ensuring that unauthorised access to CBRN materials of concern
is as difficult as possible

Detection:

having the capability to detect CBRN materials;

Preparedness and Response:

and being able to respond efficiently to CBRN incidents
and recover from them as quickly as possible

***Modern detectors and detection systems play a key role for a future reliable
functioning counter terrorism in Europe.***



The European Security Research and Innovation Forum (**ESRIF**) published a report for security products and the European Security Research and Innovation Agenda (ESRIA) supports all efforts to identify necessary new standards and new initiatives and **raises the demand for a European Security Label as a common "seal of quality" for security equipment, capabilities and solutions.**

Communication from the Commission COM (2009)691 final:

"A European Security Research and Innovation Agenda – Commission's initial position on ESRIF's key findings and recommendations" :

- ☑ **wish to improve the competitiveness of the European Security Industry** by: Not only validation of technologies and solutions but also **by certification and where appropriate standardization**;

Evaluating the applicability of a European Security Label!

- ☑ **finding ways for speeding up certification, validation, and, as appropriate, standardization work in the area of security, notably as regards the applicability and efficacy of a "European Security Label";**

Evaluating the applicability and efficacy of the numerous initiatives available to the EU and its Members States such as:

- ☑ **the creation of an Internal Security Fund or a "European Security Label"**



COMMISSION OF THE EUROPEAN UNION

COMMUNICATION FROM THE COMMISSION

"A European Security Research and Innovation Agenda – Commission's initial position on ESRIF's key findings and recommendations"

- 1.) increasing interest from local police forces, civilian first responders etc. for CBRNE detection technologies to reduce vulnerability against terrorist threats.
- 2.) although a variety of modern technologies are available on the market, end-users and decision makers often hesitate to order because they want verification of the manufactures specification by an independent third party or perform own tests. They want to ensure that the purchased detectors serve the future purpose and works in conformity with the manufactures specified properties.
- 3.) detector tests and their certification are very expensive
 - Products tested and certified to procedures or national standards in one European country or in the United States are not recognized in another country - have to be retested and re-certified according to specific national requirements
 - missing mutual recognition of the test results.
- 4.) manufactures want an appropriate and fair system of testing.

The idea of CREATIF:

The design of strategies, preconditions and rules for an internationally recognized certification system, which in the future can provide reliable data that any CBRNE related device or professional service, complies with stated specifications and/or standards.



General Rules for Certification

- A certification system must provide
 - technical and procedural criteria,
 - management rules,
 - guidelines,
 - key elements and
 - structures to carry out certification on the basis of criteria for a special purpose.
- Essential components of an existing verification/certification system include:
 - a published standard or generally accepted rules and/or specifications,
 - a generally (by all participants) recognized accreditation procedure
 - competent accredited certification bodies,
 - and a competent accreditation body.



Standards:

Technical Aspects

- are source of technical know-how (defines the technically accepted State of Art),
- have a value-added role for research and innovation (provide knowledge base),
- provide scientific basis for new legislations in health, safety and environment sectors,
- can be a starting point for innovation.
- provide a knowledge as public good free from rivalry and excludability

Economical Aspects




- can define some system features, characteristics or properties which are needed to demonstrate devices and systems capability to solve user needs and they will likely succeed on the global market by this way,
- with good reputation makes the Quality assessment of a product possible and can signal customer the high product quality,
- can reduce an unnecessary variety of a products,
- prevent the drive out of good from bad competitors when the product quality is hard to assess by customers and/or the high quality goods are expensive to produce,
- facilitate trade and technology transfer.

Summary

The existence and use of European CBRNE standards could make it easier to produce, sell and buy detection equipment and to develop an innovation-led growing market .

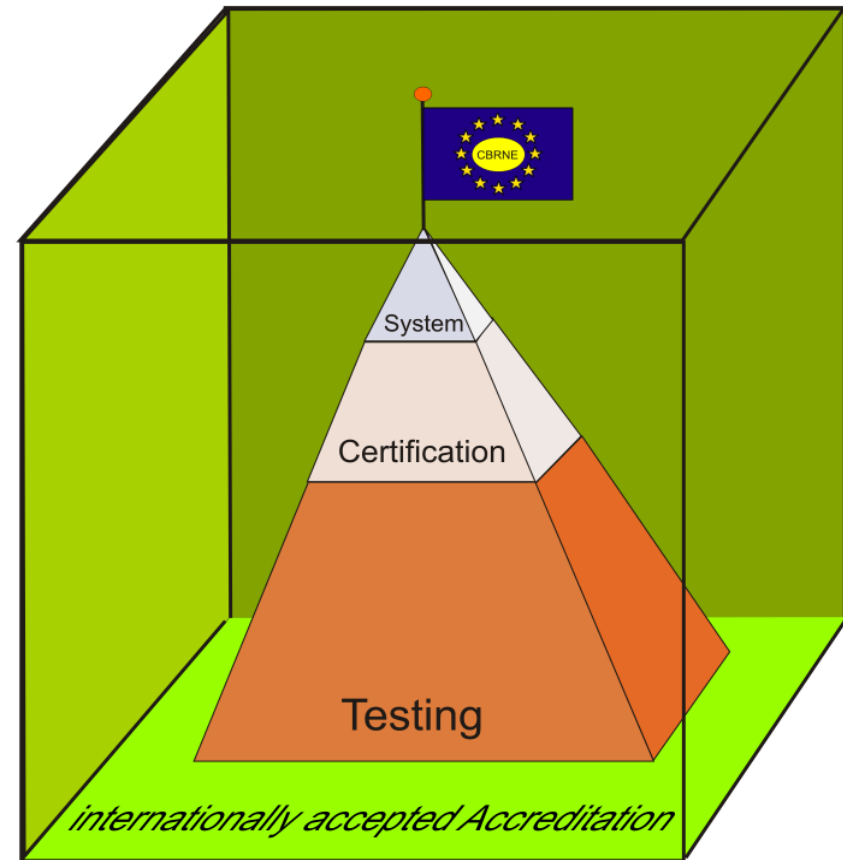
The European CBRNE Certification

Certificates issued on the basis of the **European CBRNE Certification** demonstrate the performance quality of CBRNE products according to European and International standards, protocols and European Directives.

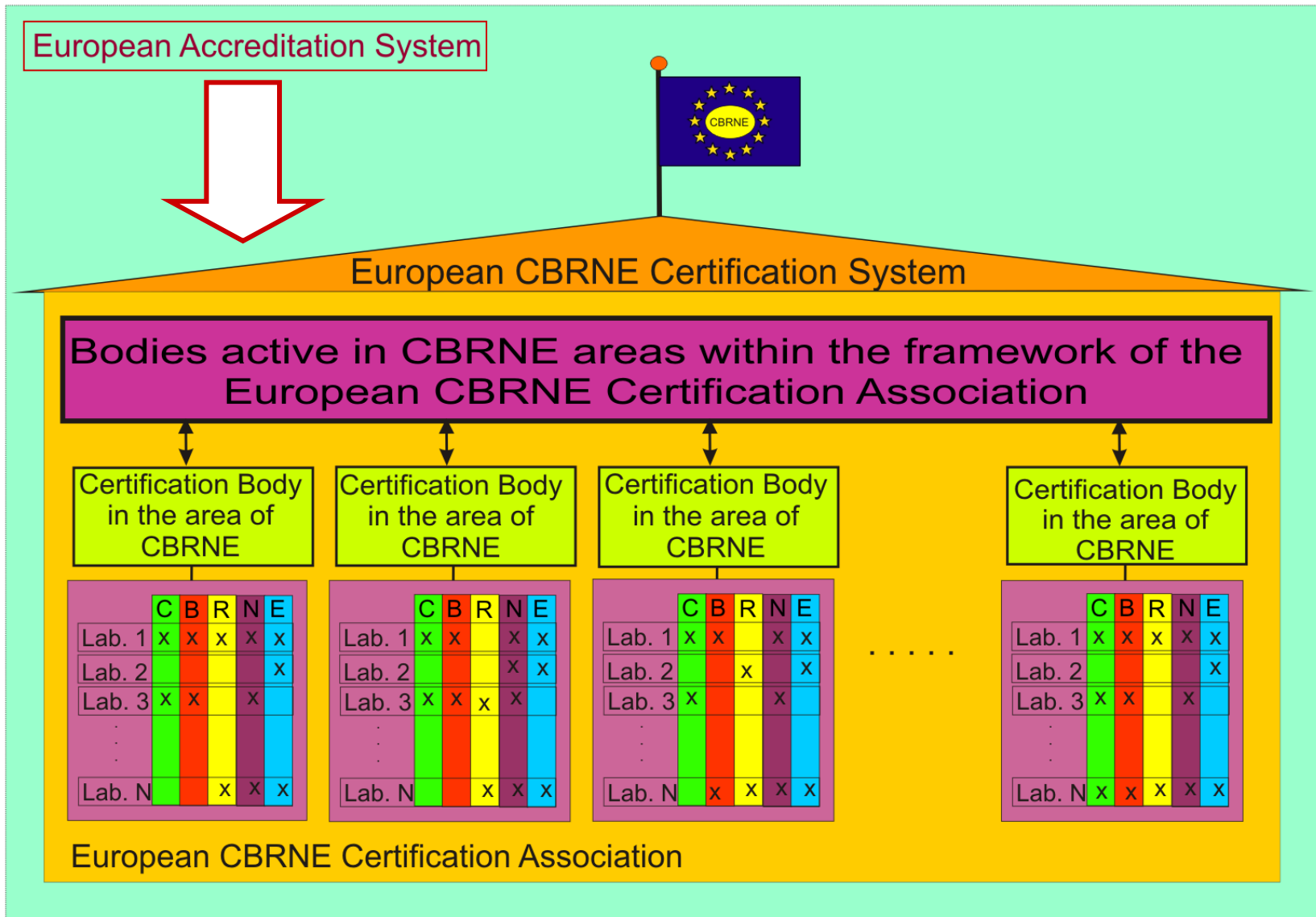
-  The **objective** is to build up customer confidence by levelling the competitive playing field for all manufacturers and by increasing the integrity and accuracy of the DIM performance ratings (properties).
-  It should create a common platform for the **manufacturers** where competition can take place on comparable basis of performances, for the benefit of specifiers and end-users.
-  It gives the **End-User** the reassurance that they are purchasing quality products that are working in conformity with the specified dimensioning and properties.

The future European Certification System for CBRNE Sensor Systems and Devices shall be an ***internationally recognized certification system*** that seeks to ensure that any CBRNE related device or professional services complies with stated specifications and /or standards.

The Future European Certification System for CBRNE DIM products requests accreditation of the **testing laboratories and certification bodies** according to EN ISO IEC 17025 standard. Selection criteria are the testing capacity and dimensions but also the experience of the personnel.



Testing performed by a professional partner is the basic requirement of Certification.



The European CBRNE Certification Association **is active in the area of CBRNE.**
It operates an office for the European CBRNE Certification System and represents the viewpoint of third party certification.
It publishes for each Certification Scheme a body of permanent and operational responsibility that governs the functioning of the scheme.

The tasks of **ECBRNECA**:

- to facilitate the certification activity of its members
- to promote third party certification based on European standards
- to secure the necessary feedback from certification to standardisation
- to secure openness and transparency in the European certification schemes
- to protect the interests of participating European certification schemes,
- keeping into account the interests of manufacturers, users and consumers
- to monitor the use of schemes on the market
- to co-ordinate European certification schemes with international schemes for the benefit of European industry.
- to carry out all objectives for further realisations of the aims of the association.

The Executive Board is working for the CBRNE area. It is the consultative body where Manufacturers, Certifiers and other stakeholders discuss common strategic issues concerning European Certification on CBRNE on global market.

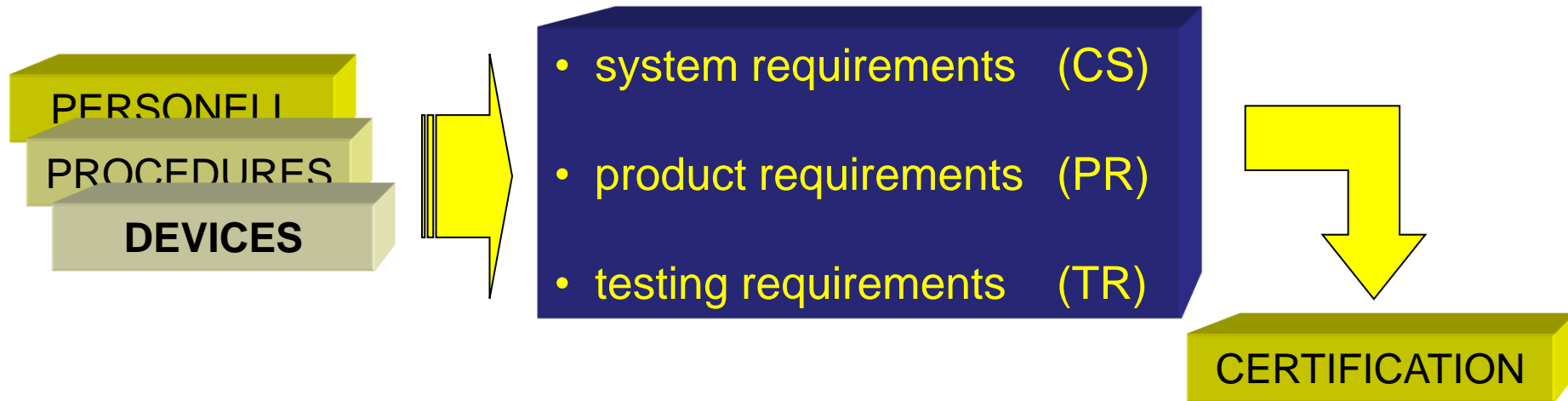
It gives advice

**on development,
strategy and
policy matters**

to European CBRNE Certification Association

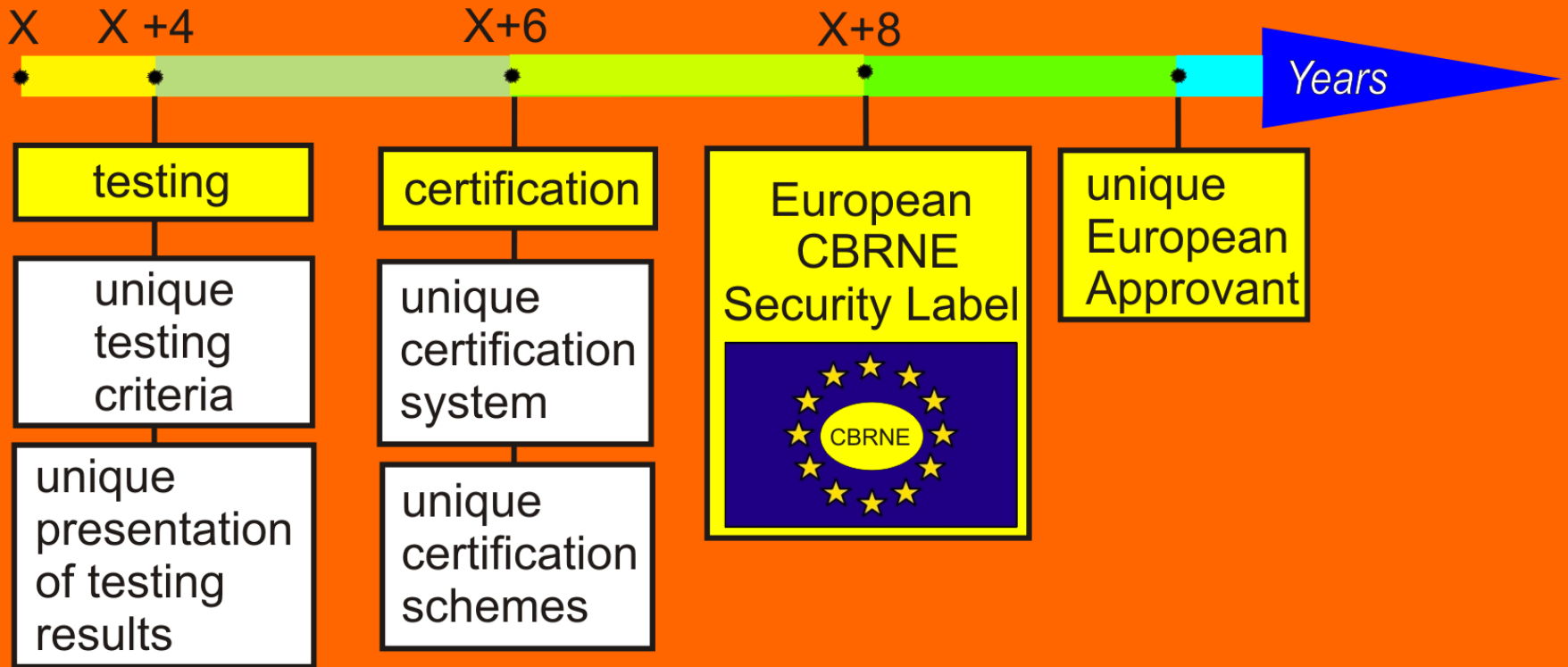
and makes appropriate *links to the EC policy and regulation authorities.*

- (I) shall reach Europe wide acceptance of test reports and certificates
- (II) Therefore, expectations of stakeholders as well as legal requirements, e.g. EC-Directives, shall be taken into account for the future system.
- (III) This applies to all elements of the system:



- (IV) Product related requirements for testing and the product itself are specified in individual certification schemes.

European CBRNE Certification Scheme



Session 4
Creation of a European Certification System for CBRNE Sensor Systems and Devices

Roundtable Discussion
U. Ewert; J. Beckmann; F. Streb

14:00

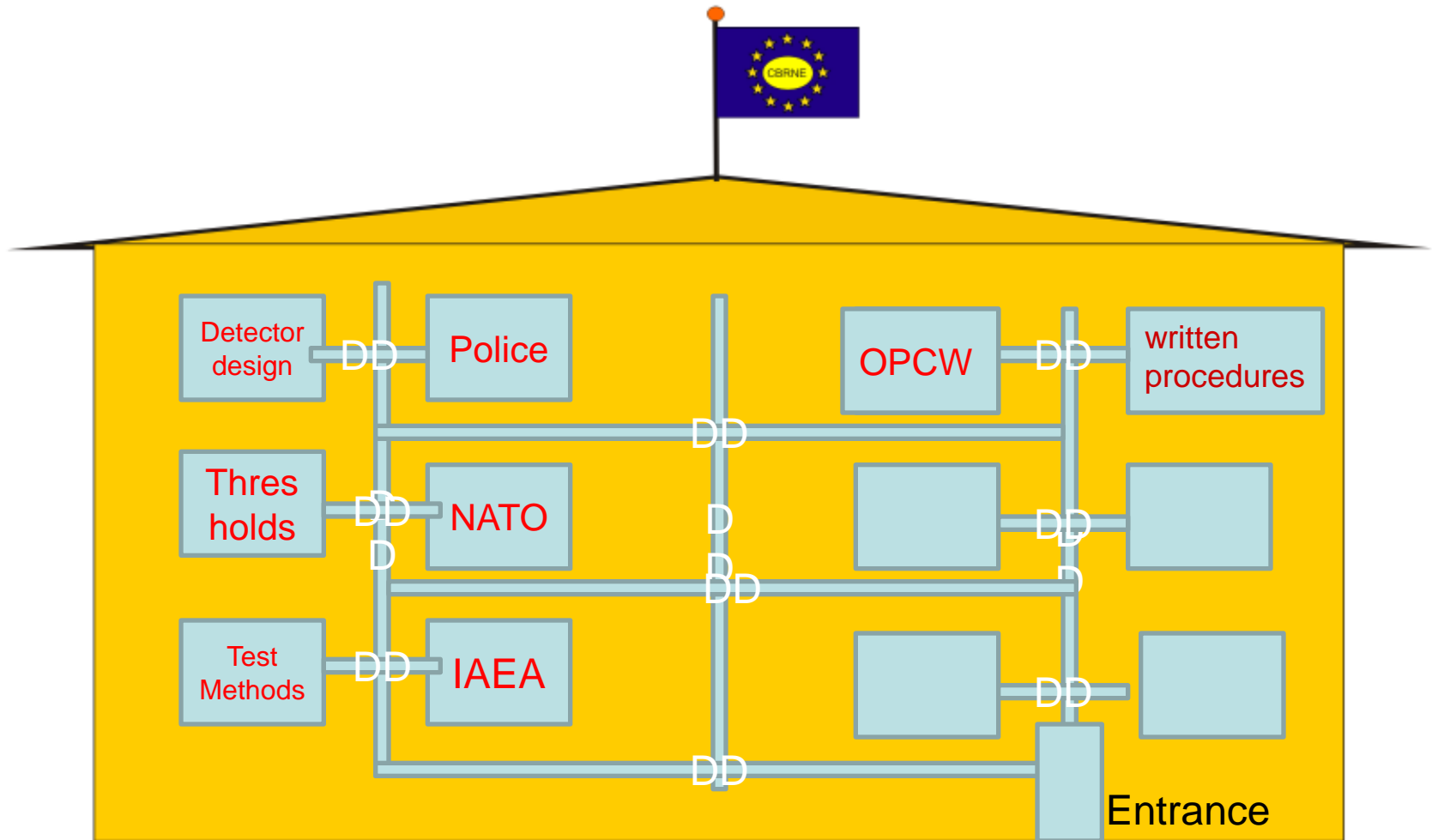
First steps toward an European Certification System for CBRNE;

- How to fill the empty house?
- Is there a chance to run a CBRNE certification system on a commercial base?
- How to develop test, product and system requirements on
 - already existing preconditions
 - existing quality of test laboratories ...
- Do we need new Ideas for a CBRNE certification theme?

Results of the Roundtable Discussion in Berlin on the 2nd CREATIF WS

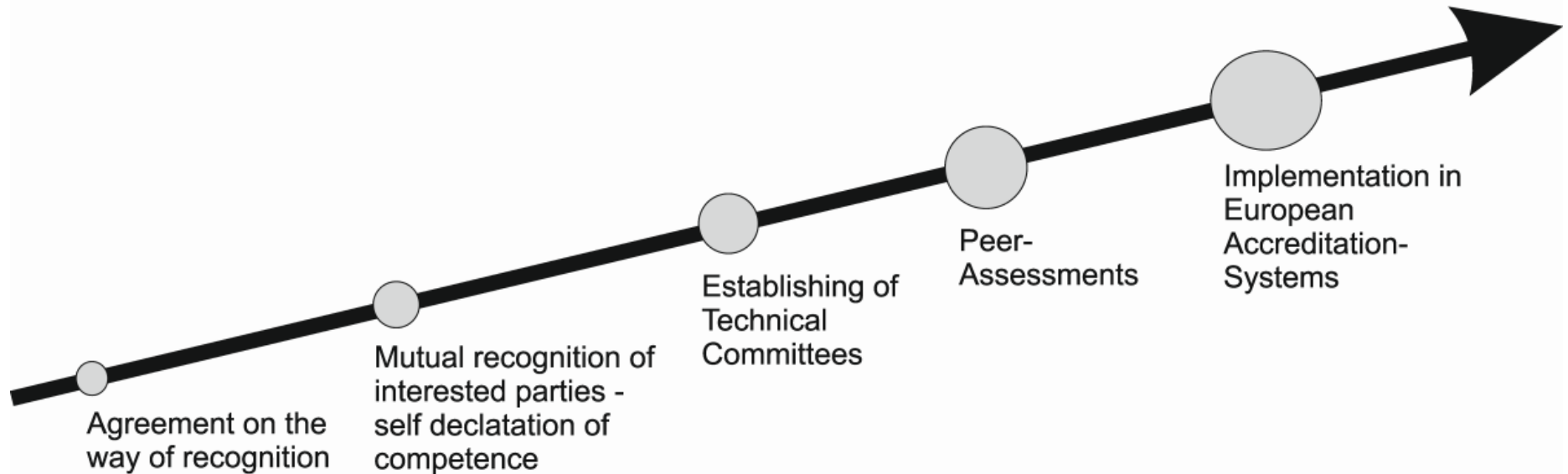
Testing	<input checked="" type="radio"/> yes	<input type="radio"/> no
Compare results	<input checked="" type="radio"/> Yes	<input type="radio"/> no
Different procedures for different applications	<input type="radio"/> yes	<input checked="" type="radio"/> no
Standardization	<input checked="" type="radio"/> yes	<input type="radio"/> no
Conformity declaration or 3 rd party certification	<input type="radio"/> CD	<input checked="" type="radio"/> 3Cer
Accreditation	<input checked="" type="radio"/> yes	<input type="radio"/> no
Security label	<input checked="" type="radio"/> yes	<input type="radio"/> no
CBRN label	<input checked="" type="radio"/> yes	<input type="radio"/> no

Development of Standards and Procedures



Different rooms and ways to fill the empty house

Way to Accreditation in the field of CBRNE



Short Summary for testing and certification according to ISO/IEC 17025 and EN 45011

Solution:

Built up step by step unified procedural schemes („testing and certification scheme“) within the EU, e. g. between the CREATIF partners and customers / stakeholders by:
competent procedures, carried out by competent bodies: transparent, traceable and independent and impartial

Preconditions from CREATIF:

- Test methods for CBRNE devices and sensors exist
- We learned about first experiences on testing from our partners
- Do we have a chance to combine the existent experiences to a network with the aim of a further competent European network (or body) for testing and certification although there exist a low number of standards.

Conformation of essential product properties by issuing a third party fact sheet

Scope :

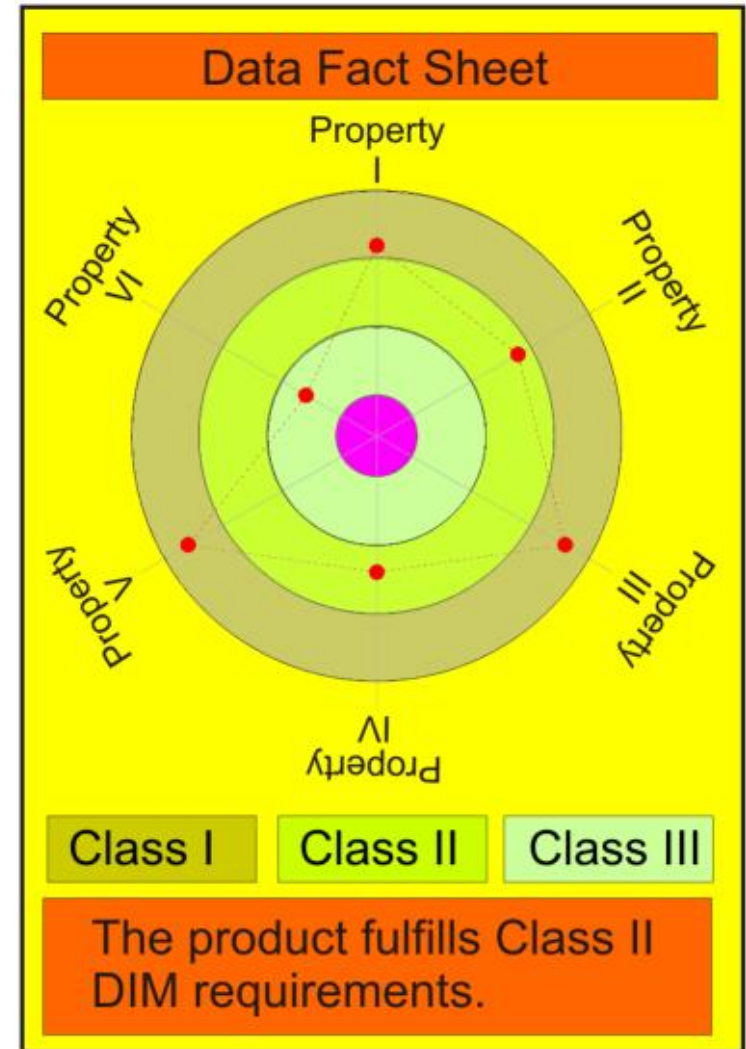
Characterization of essential product parameters such as e.g. product parts and associated components, device properties, and additional tools

First Step: Based on the future application the manufacturer and the test laboratory define certain specifications which are ambitious but technically reachable.

Second Step: The test laboratory develops measuring procedures to measure the previously defined properties.

Third Step: The test laboratory measures

Fourth Step: The test laboratory issues a data fact sheet and evaluates the performance quality of the product according to previously defined System Classes.



The certification system for CBRNE detection equipment is intended to be a rigorous system, however, this will

- assure a high level of acceptance from the side of the manufacturers, end users, and stakeholders because they are familiar with the system logics
- allow mutual recognition of the proposed certification label among European countries and by USA and Asian countries
- provide “third party”, independent reliable and recognized testing reports the for end-users
- offer existing testing facilities the opportunity to achieve European recognition as reference laboratories.
- stimulates and supports the development of standards in the CBRNE sector
- BAM could provide expertise and experience for the development of a future CBRNE certification system on both *TESTING* and *CERTIFICATION*.



A certification system for CBRNE detection systems is needed to provide a EU security Label with a high level of confidence, quality and trust.

- CREATIF could be a nucleus and continue work to set up conditions for a future European Certification System. An Advisory Group should be founded to guide the set up of a Certification Association.
- CREATIF partners should be embedded in future European Test Centres of CBRNE detectors to use the advantage of the network (partners already, high level of trust).
- A new European test project should be launched to practice technical as well as procedural aspects of CBRNE testing. The outcome of the project should define existing gaps and initiate/recommend development of new standards needed for the future CBRNE certification system.
- Simultaneously a certification project should be started with competent European test centres to define system requirements as well as to develop a uniform testing and certification scheme, to create rules for the future Accreditation System and to set up preconditions for the future European CBRNE Association.
- BAM could provide expertise for both *TESTING* and *CERTIFICATION*.

Creatif is a FP7-funded project, FP7/2007-2013 grant agreement no. 217922



Dr. rer. nat. Jörg Beckmann
Telefon : (+49) 30 8104-3691
Telefax : (+49) 30 8104-1837
E-Mail : joerg.beckmann@bam.de
internet: www.bam.de

Federal Institute for Materials Research and Testing
Division VIII.3: Non-Destructive Testing / Radiological Methods
Unter den Eichen 87; D-12205 Berlin