European Commission initiative: CEN Workshop 10, 'Standardization for Defence Procurement- European Handbook'

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&

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THALES

History

- **2000**
  - European Commissioner Liikanen: 'Towards an European market for defence procurement'
  - Key constraint: plethora of national standards
  - CEN was the European Institute for standards, and a working group BT/WG125, for defence existed
  - A 'workshop' structure appeared to be the best platform: under CEN, no national representatives but stakeholders can participate directly
  - Thus 'Workshop 10; Standardisation for Defence Procurement'
    - Chairman: Jean-Michel Bardot (Vice-President EADS, Quality)
    - Secretariat: Marie-Joëlle Antoine (AFNOR)
- **2002**
  - Business plan
- **2003**
  - Handbook: collection of all standards used within the EU

2004-2005

- **2004**
  - **8 expert groups were created on subjects which were considered as the most important**
    - **NBC detectors**
    - **Energetic materials**
    - **Fuels and lubricants**
    - **Batteries**
    - **Packaging**
    - **Electrical and mechanical interfaces**
    - **Electromagnetic environmental effects (28 members: largest group)**
    - **Environmental testing**
- **Tasks 2004**
  - **Selection of relevant standards**
  - **Comparing the standards**
- **Task 2005**
  - **Developing recommendations on the use of standards**

European Commission activity: CEN WS 10

- **Economical reason for doing this:**
  - Improve competitiveness European defence industry
    - No national players anymore!
  - Government/customer no longer pays for testing
  - More efficiency needed
    - more standards = personnel needs to learn more standards
    - more standards = more paperwork
  - More and more commercial items are used
    - tested according to civil standards
- **Political**
  - Improve European strength
- **European Defence Agency established in 2004: increased momentum**

EG7: Electromagnetic environmental effects

- **28 members (started with 14)**
  - **Finland, France, Germany, Italy, Netherlands, Poland, Sweden, Switzerland, United Kingdom , and NATO**
  - **11 MoDs + 1 NATO**
  - **16 (professional) Industry (THALES, Intellect(BAe), MBDA, SAAB, Ericsson, Diehl, Vaisala, Esju, Vectronix AG, Carlo Gavazzi Space, Galileo Avionica)**

- **Meetings:**
  - **2004: 22/1(inaugural), 17/3, 7/4, 25/5, 6/7, 30/9+1/10, 17/11**
  - **2005: 2+3 march, 27 april**

- **Future: platform, supported by European Defence Agency, industry+MoD's ???**

Plethora of (Military) EEE Standards

- NATO
- DEFSTAN
- GAM
- IEC
- VG
- MIL

Using different standards is a cultural aspect rather than a technical discrimination

Task 1 (2004): Selection of relevant standards

- Relevant E^3/EMC standards in initial handbook: 230 standards
- Adding missing standards: 420 standards (SW, PO, etc. included)

  (But >1000 standards not in the handbook could be added….)

- Phenomenae covered (requirement, test, guidelines):
  - EMI, Radiation hazards (personnel, ordnance, fuel), Lightning, Nuclear and lightning EMP, DC magnetic field, power quality
  - Less: Power supply issues, Spectrum control, HIRF, TEMPEST
  - No HPM, UWB, I-EMI

- Overlap with other EGs, in some standards
  - EMC of electric explosive devices (EG2 energetic materials)
  - HERF (RadHaz) (EG3: Fuels and Lubricants)
  - Power supply, cables (EG6 Electrical interfaces)
  - All mechanical and climatix effects in EG8 (Environmental Testing)

  but not considered as constraint

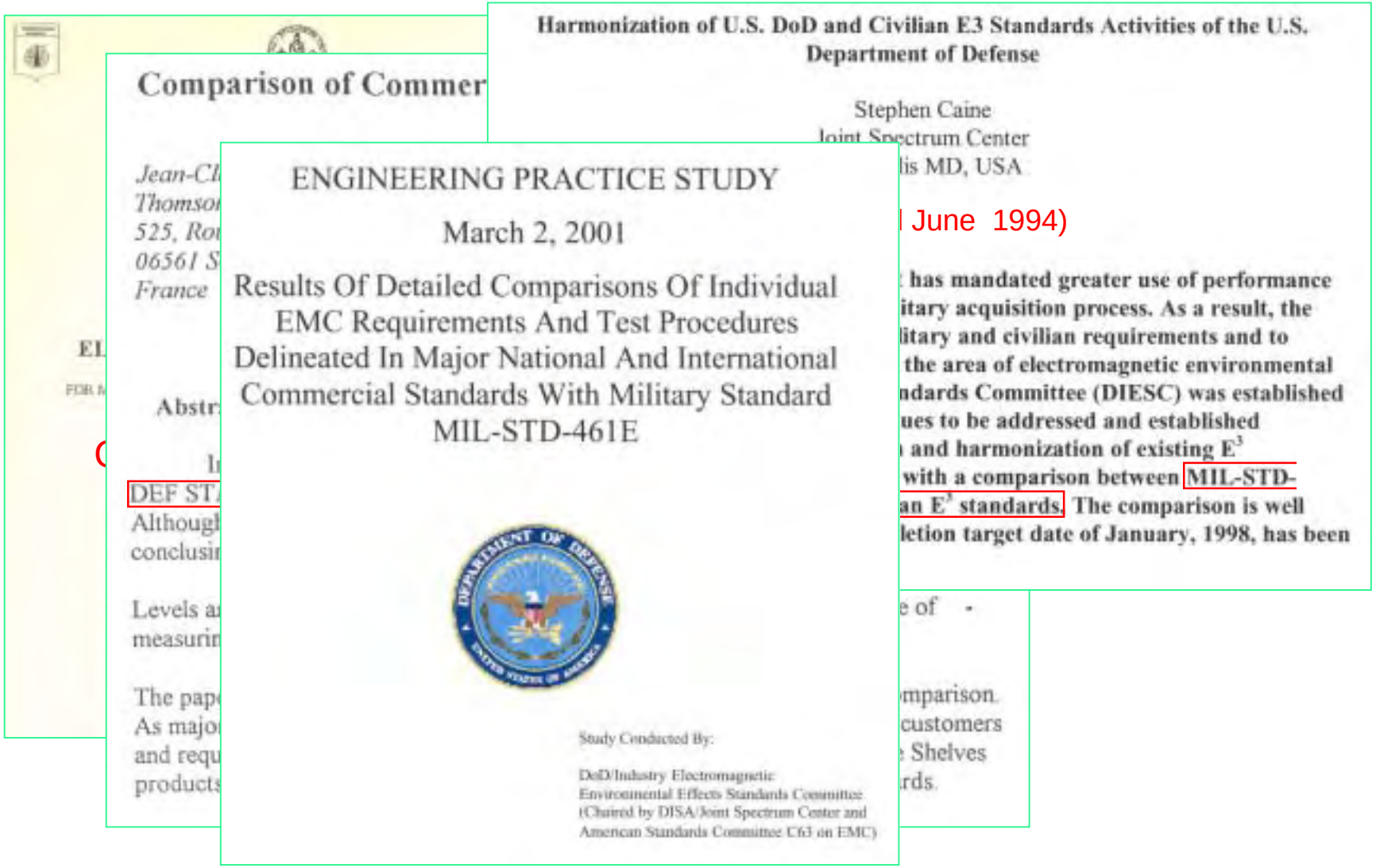
Task 2 (2004): Comparing the standards

- **Constraints and solutions:**
  - Standards not available:
    - 'self-extinguishing CD-ROM' with nearly all standards distributed
  - Too many standards, therefore:
    - Requirements and testing are considered as most important
    - Standards enabling 'free trade' are important
    - Platform level (system), guidelines, management, classified standards (TEMPEST) etc. marked, but not discussed in detail
  - IEC as reference (?)
    - IEC not structured and too limited (now), therefore STANAG as reference, future IEC (i.e. a migration to basic IEC standards as the test standard could be possible, on very long term)
  - Maturaty STANAGs not sufficient (yet) and progress was slow
    - Push NATO via participating MoDs
  - Acceptance level of STANAGs was low; only a few STANAGS have been used
    - Push Industry
  - STANAGs have been developed by MoD's, nearly without industry involvement
    - Mentioned to CEN/WS10/EU/EDA

Good EMC behavior insensitive to standard used

EMC requirements are set by the environment it is intended for
EMC tests are set by the phenomena (and size of equipment)

Task 2 (2004): Comparing the standards



Harmonization of U.S. DoD and Civilian E3 Standards Activities of the U.S. Department of Defense

Stephen Caine
Joint Spectrum Center
lis MD, USA

June 1994)

has mandated greater use of performance
itary acquisition process. As a result, the
litary and civilian requirements and to
the area of electromagnetic environmental
ndards Committee (DIESC) was established
ues to be addressed and established
and harmonization of existing E3
with a comparison between MIL-STD-
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ENGINEERING PRACTICE STUDY

March 2, 2001

Results Of Detailed Comparisons Of Individual EMC Requirements And Test Procedures Delineated In Major National And International Commercial Standards With Military Standard MIL-STD-461E

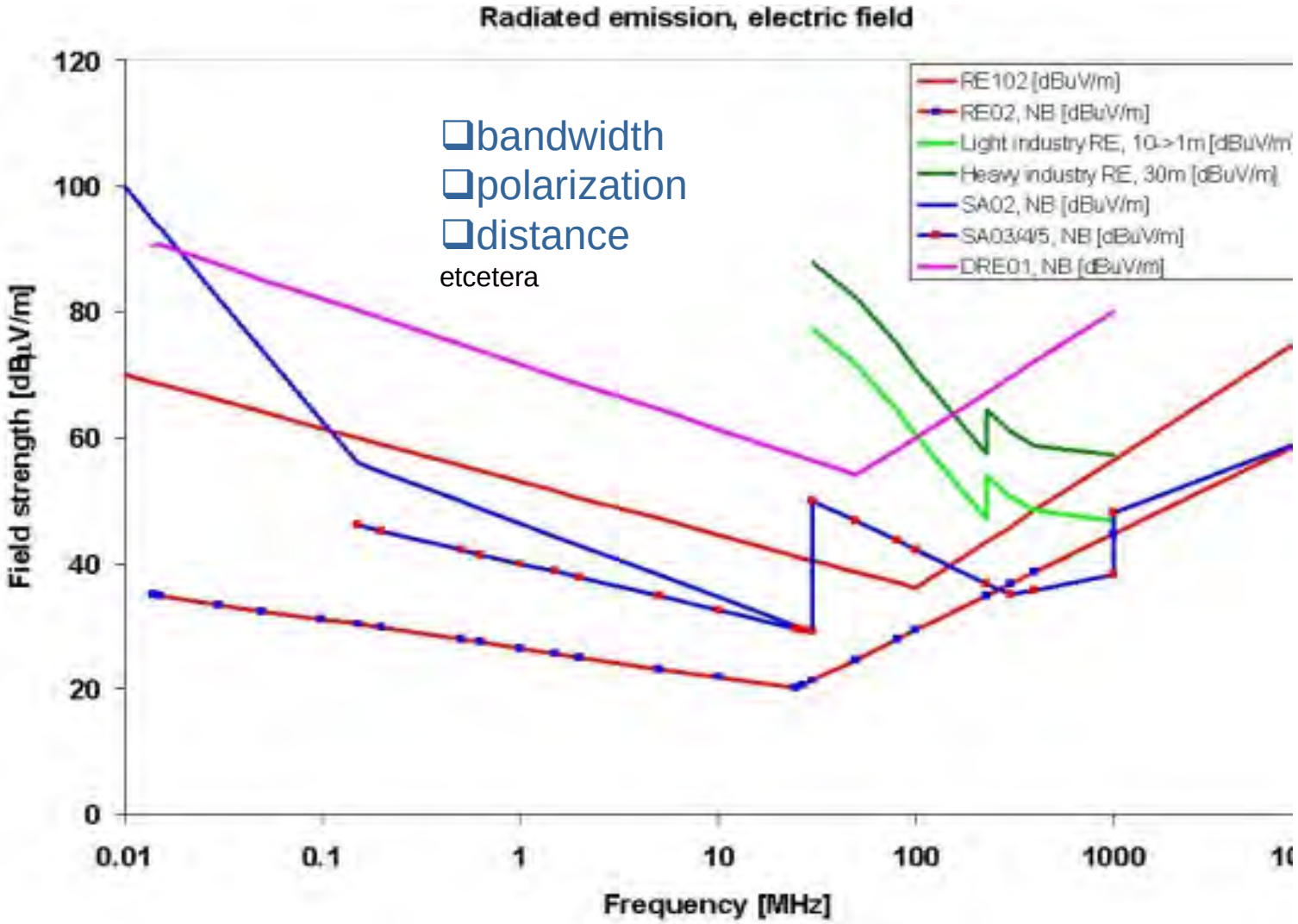
Study Conducted By:

DoD/Industry Electromagnetic Environmental Effects Standards Committee (Chaired by DISA/Joint Spectrum Center and American Standards Committee C63 on EMC)

Task 2 (2004): Comparing the standards

- bandwidth
- polarization
- distance

etcetera



Task 2 (2004): Comparing the standards

- **Approach:**
  - STANAG (NATO) standards are the reference
    Action: Find for every (national) req&test standard a NATO (STANAG) equivalent (6 STANAGs)
- **Selection with two columns:**
  - Guidance:
    - **Use** (EN, IEC, RTCA DO 160, STANAG etc)
    - **Guide** (use it as a book on your bookshelf, not in contracts)
    - **Obsolete**
    - **Can be replaced by ….**
    - …., such as
      - Wait (to be solved this year)
      - System (to be discussed)
  - Comments field

Task 3 (2005): Recommendations on use of standards

- **Database with two colums**
  - **Guidance**
  - **Comments**
- **Report**

Task 3 (2005): Recommendations on use of standards

1. Introduction
2. Scope
   - 2.1. Assumptions
   - 2.2. Limitations concerning other expert groups
   - 2.3. Limitations concerning the extent of electromagnetic effects
   - 2.4. Limitations concerning responsibilities in creating and maintaining standards for professional (military) applications
3. Standards for electromagnetic environmental effects
4. Preliminary Reduction Process
5. Comparison of standards
   - 5.1.
   - …
   - 5.14.
6. Recommendations for best practice
7. Recommendations for st
8. Conclusions

To be merged with other EG reports

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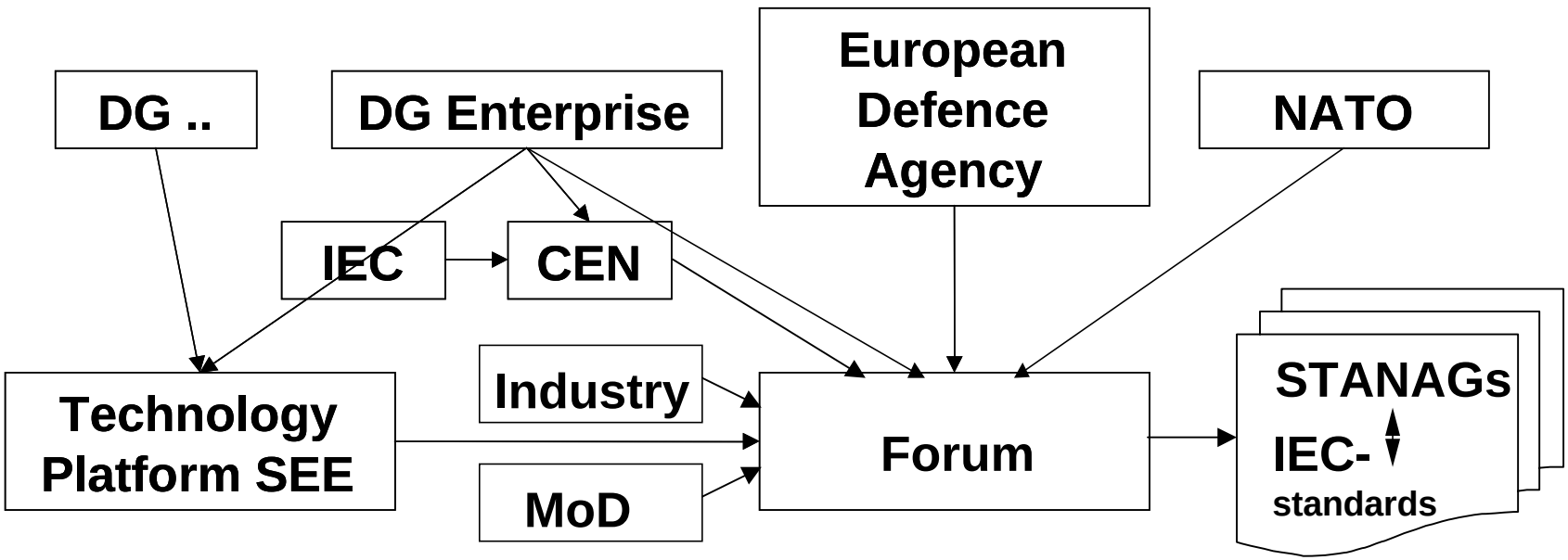
Task 3 (2005): Recommendations on use of standards

- Rationale (see also DIESC and many other comparison documents)
- Recommendations for users
  - Use STANAGs
  - Use IEC, RTCA etc.
- Recommendations for standardisation process
  - MoU CEN-NATO is now without obligations
  - European Defence Agency should take the lead, based on the security initiatives taken now, to create and maintain
    - Forum, combining industry and MoDs
    - Push towards improvement and use of STANAGs (now!)
    - Push towards improvement IEC (will reduce costs)
    - Push towards replacement of national standards by STANAG/IEC
    - Take into account new technologies and risks (UWB, spectrum management, Intentional EMI etc.)

Forum



Possible roadmap

- **Many political and technical actions in parallel needed**
- **Now momentum: keep it on track**
- **Possible actions:**