NVLAP Program
for
Cryptographic Module Testing

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National Voluntary Laboratory Accreditation Program

Jeffrey Horlick
National Institute of Standards and Technology
National Voluntary Laboratory Accreditation Program
(NIST / NVLAP)
Building 820 Room 287
100 Bureau Drive Stop 2140
Gaithersburg, MD 20899-2140

Phone: 301.975.4020
Fax: 301.926.2884
E-mail: jeffrey.horlick@nist.gov
URL: http://www.nist.gov/nvlap

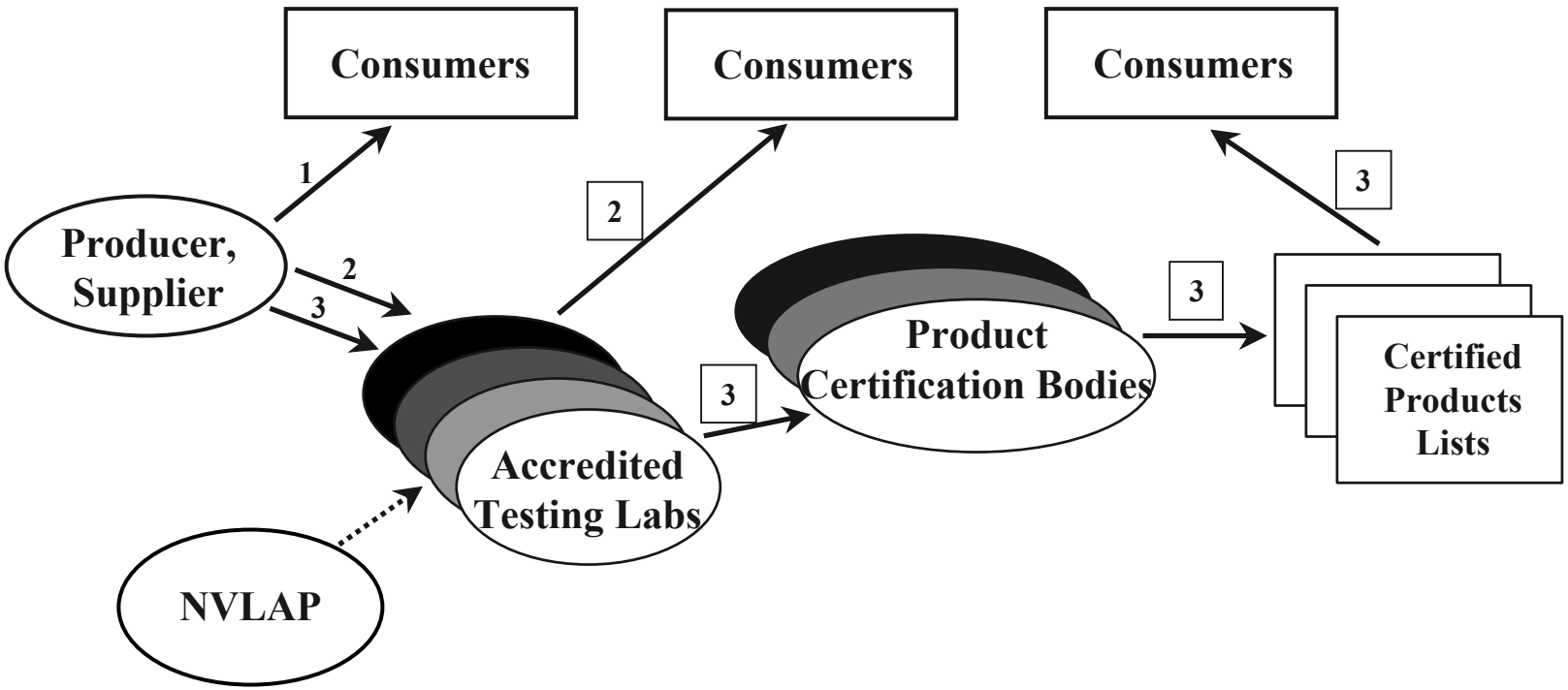
Why Laboratory Accreditation?

- So you don’t have to worry.
  - Confidence - it has been done right
  - Competence - get the right answer
  - Equivalence - get the same answer
  - Independence - nothing else is going on
  - Appropriateness - fit for purpose
  - Repeatability - get the same answer twice
  - Reproducibility - others get same answer

Why Harmonized Standards?

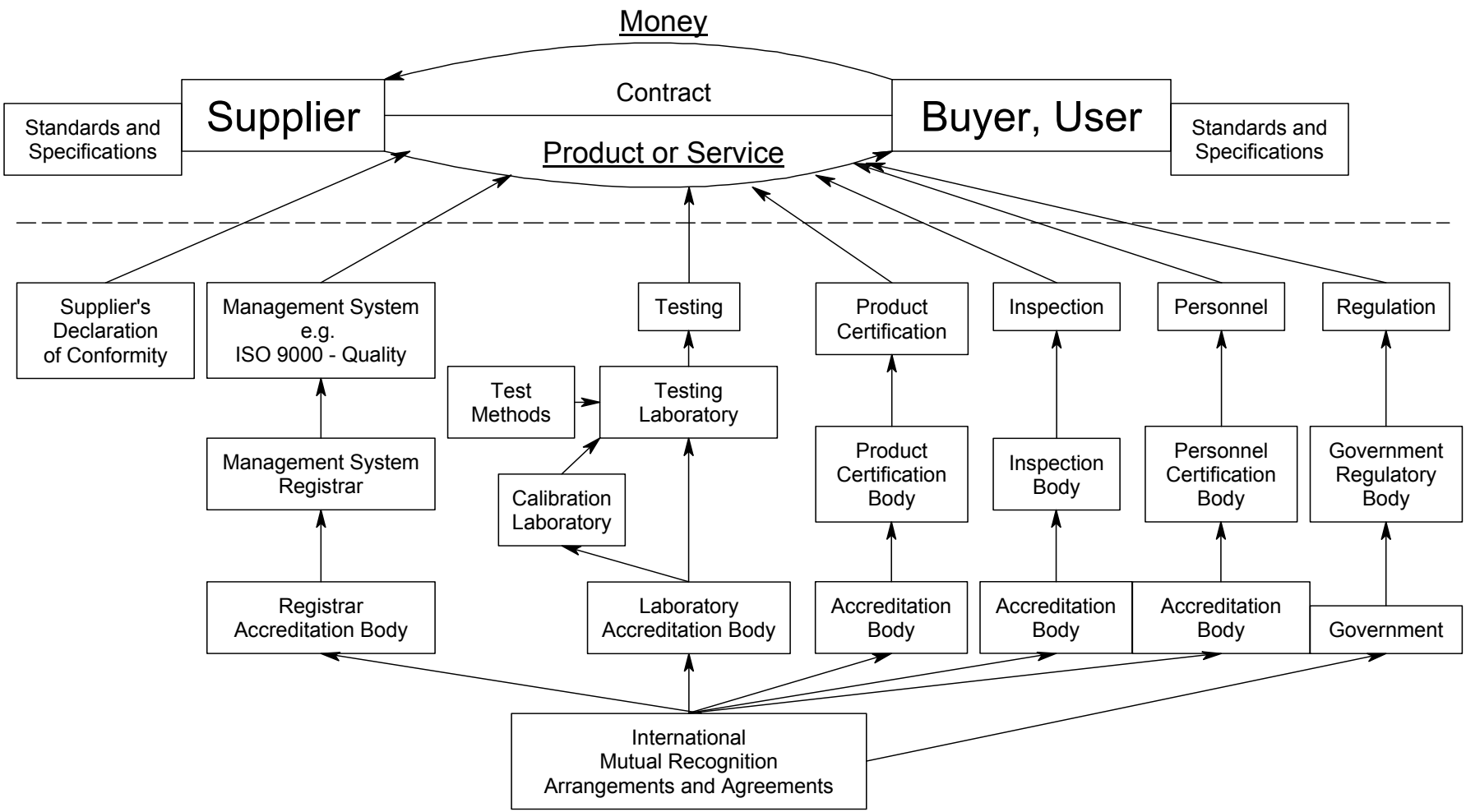
- So you can talk to each other
- So you can do business with each other

Paths to Consumer



Path 1: Declaration of Conformity
Path 2: Conformance demonstrated by testing in accredited laboratory
Path 3: Conformance demonstrated by testing and product certification

DOMESTIC AND INTERNATIONAL TRADE



CONFORMITY ASSESSMENT

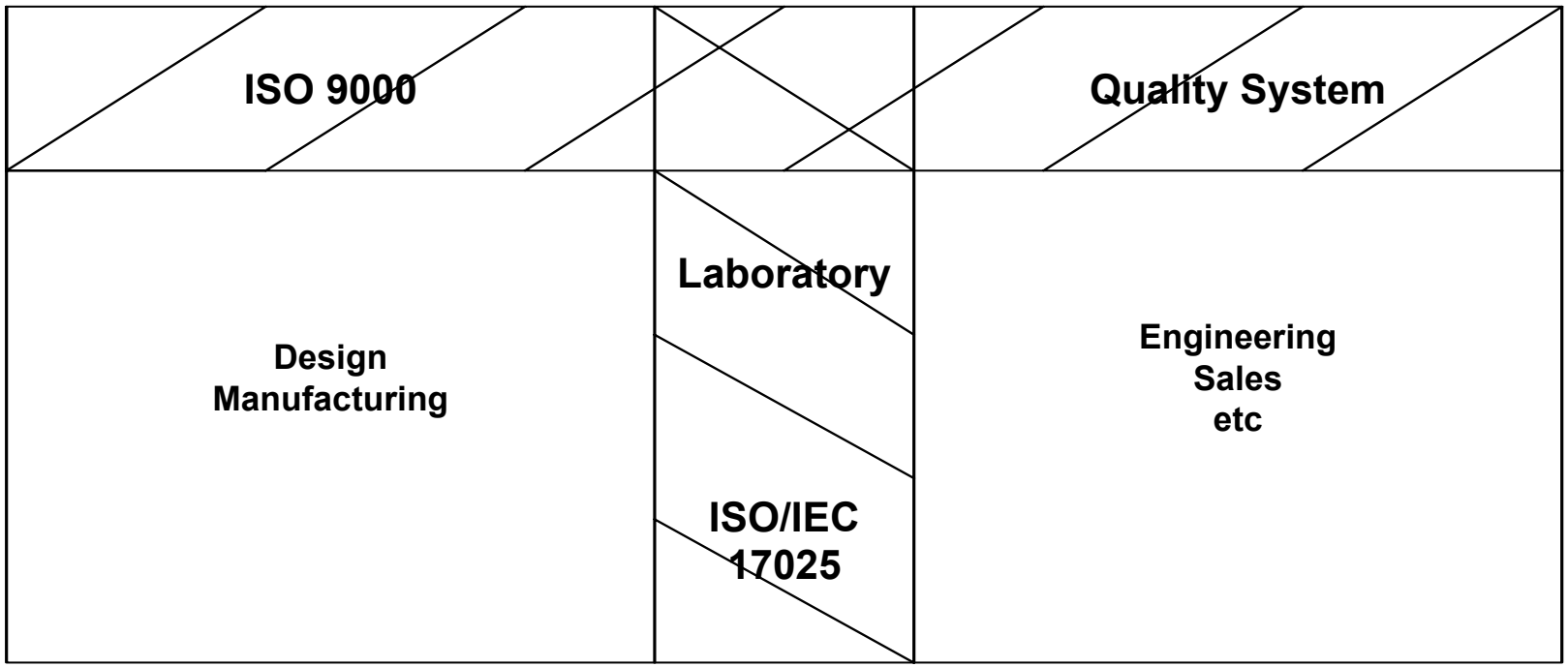
jh-20031218

Conformity Assessment - ISO Guides and Standards

Testing and Calibration Laboratories 1	Product Certification Bodies 2	Management Systems Registrars - Quality and Environment 3	Inspection Bodies 4	
Recognition Body (ILAC P1, APLAC MR001, EA-2/02)	Recognition Body (No ISO Guides or Standards)	Recognition Body (No ISO Guides or Standards)	Recognition Body (No ISO Guides or Standards)	A
Accreditation Bodies (ISO/IEC Guide 58:1993)	Accreditation Bodies (ISO/IEC Guide 61:1996)	Accreditation Bodies (ISO/IEC Guide 61:1996)	Accreditation Bodies (ISO/IEC TR 17010:1998)	B
Accredited testing and calibration laboratories (ISO 17025:1999 previously ISO/IEC Guide 25)	Product certification Bodies (ISO/IEC Guide 65:1996)	Registrars (ISO/IEC Guide 62:1996, ISO/IEC Guide 66:1999)	Inspection Bodies (ISO 17020:1998	C
Samples (Test methods and sampling methods)	Products and services (Appropriate product or service standards)	Companies or organizations (ISO 9000, ISO 14000, or equivalent)	Products (Appropriate product standards)	D

ISO 9000 and ISO/IEC 17025

ISO 9000 is a stripe across the top of an organization



ISO/IEC 17025 is a stripe from top to bottom covering the entire laboratory

International Mutual Recognition Arrangements (MRA)

World MRAs:

- International Laboratory Accreditation Cooperation (ILAC)

  for testing and calibration laboratories

  <http://www.ilac.org/>
- International Accreditation Forum (IAF)

  for QMS, EMS, and product certification

  <http://www.iafinc.org>

(Quality Management System, Environmental Management System)

NVLAP Programs (LAPS) for Information Technology Security Testing

- NVLAP accredits laboratories for testing to:
  - Federal Information Processing Standard (FIPS) 140-1 and 140-2 for cryptographic modules
    details: http://www.nist.gov/cmvp
  - ISO/IEC 15408 Common Criteria
    details: http://niap.nist.gov/cc-scheme/ and http://niap.nist.gov/index.html

Program Specific Requirements for Cryptographic Module Testing LAP

- NIST Handbook 150 *NVLAP Procedures and General Requirements* (contains ISO/IEC 17025)
- All requirements of the CMVP
- NIST Handbook 150-17 *Cryptographic Module Testing* extends and defines Handbook 150 specifically for this program
- Proficiency Testing is designed specifically for this program
- Technical experts are trained in the NVLAP methodology and to assess to ISO/IEC 17025

Accreditation to ISO/IEC 17025:1999

- Review of quality system: Quality Manual, Procedures, Instructions, Records
- On-site assessment by a team of peer technical experts
- Participation in proficiency testing
- Evaluation of the above by NVLAP team
- Feedback to the laboratory
- Corrective action by the laboratory

Proficiency Testing

- An integral part of the accreditation process - customized for field
- A means of periodically checking laboratory performance and ability
- Required for initial and/or continuing accreditation

ISO 17025 - Management Requirements (Section 4 of NIST Handbook 150)

- Organization
- Quality system
- Document control
- Review of requests, tenders and contracts
- Subcontracting of tests and calibrations
- Purchasing services and supplies
- Service to the client
- Complaints

ISO 17025 - Management Requirements cont'd

- Control of nonconforming testing and/or calibration work
- Corrective action
- Preventive action
- Control of records
- Internal audits
- Management reviews

ISO/IEC 17025 -Technical Requirements (Section 5 of NIST Handbook 150)

- General - factor contributing to correctness and reliability
- Personnel
- Accommodation and environmental conditions
- Test and calibration methods and method validation
- Equipment

ISO/IEC 17025 -Technical Requirements cont'd

- Measurement traceability
- Sampling
- Handling of test and calibration items
- Assuring the quality of test and calibration results
- Reporting the results

Additional NVLAP requirements

- Referencing NVLAP accreditation (use of logo and “NVLAP”)
- Implementation of traceability policy
- Approved Signatory
- Authorized Representative(s)

New Applicants for Accreditation

- Send application to NVLAP including:
  - General Application Forms
  - Program Specific Application Form
  - Fees
  - Quality Manual
- Quality documentation review by assessors
- Written exam Proficiency Test
- On-site Assessment with Round Table Quiz
- Proficiency testing of artifact after on-site visit
- Resolution of all non-conformances
- NVLAP review and grant of accreditation

Typical On-site Visit - conducted every other year (after initial two)

- Team of two assessors for 1 1/2 days
- Entry meeting with lab management
- Review quality system documentation including, records, personnel folders, technical documentation, internal audits, management reviews
- Examine facilities, hardware, software,..
- Staff interviews on all aspects of standards and testing with appropriate demonstrations

Typical On-site Visit - conducted every other year - cont'd

- Proficiency testing
- Exit meeting
  - On-Site Assessment Report given to lab
  - Required written responses to NVLAP are discussed

Quality System documentation includes (but is not limited to)

- Quality manual
- Policies, objectives, commitments
- Procedures - management and technical
- Instructions - management and technical
- Records - management and technical
- Roles and responsibilities
- Organization charts - inside laboratory boundary and laboratory's place in larger organization
- Complaints log

Proficiency Testing

- Before the on-site visit
  - A written, essay-type examination is sent to the laboratory
  - The laboratory chooses who works on exam
  - Laboratory has approximately one week to finish
  - Results returned to NVLAP and reviewed by assessors before on-site visit
  - If the laboratory does not perform satisfactorily, the on-site visit will be delayed

Proficiency Testing

- During the on-site visit
  - Assessors hold a round-table quiz / interview with entire staff
  - An artifact is given to the laboratory for testing after the on-site visit. Instructions are discussed. One CMVP person will act as the vendor. Artifact is tested by lab while interacting with “vendor” and validation authority.
- After the on-site visit
  - The artifact test is reviewed

Granting Accreditation

- NVLAP reviews all information with input from assessor team
- All non-compliances must be resolved
- NVLAP grants accreditation for one year

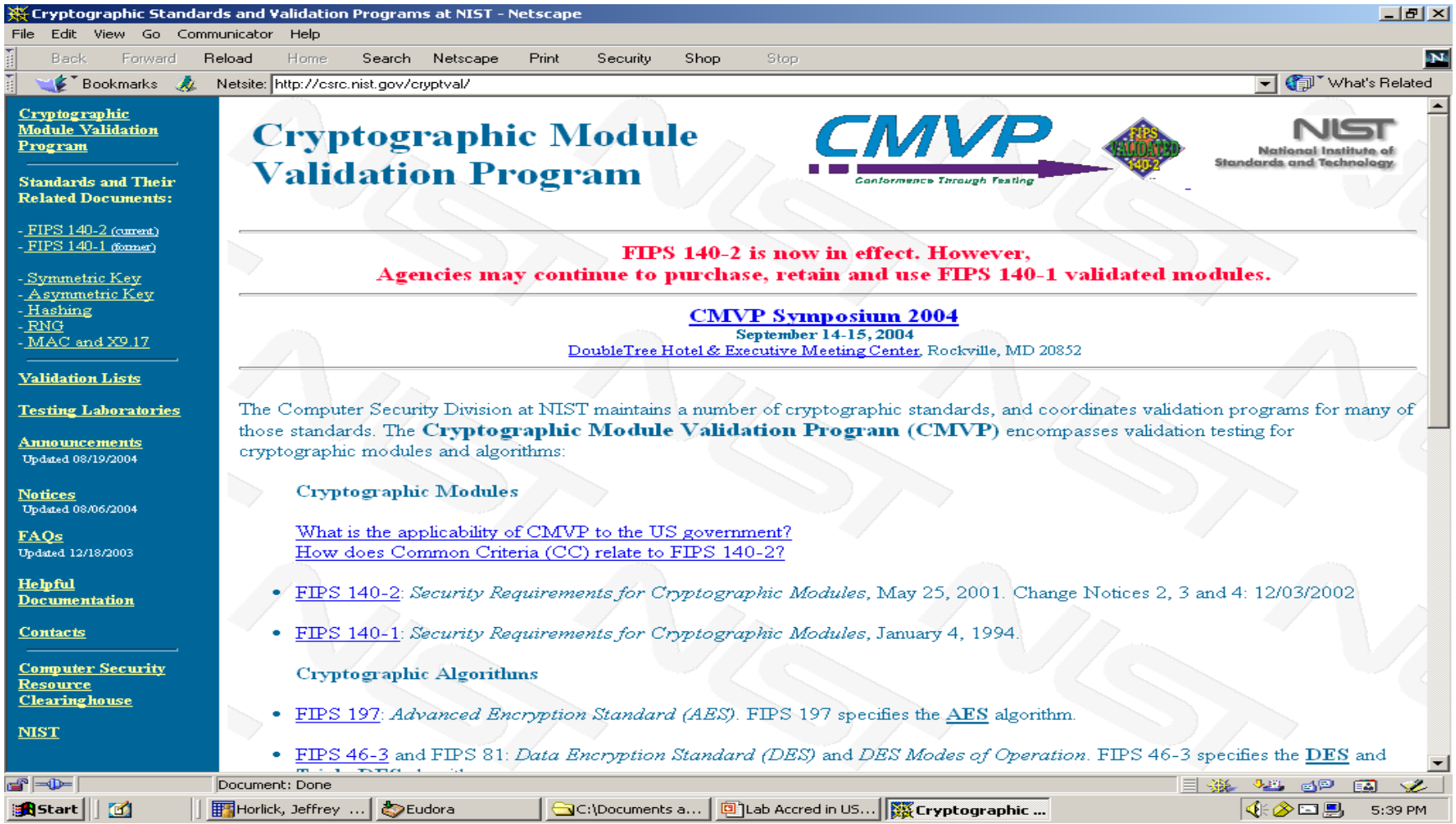
- Renewal each year with on-site every-other year (after initial and first-year onsite assessments)

International Laboratory Accreditation Cooperation (ILAC) Brochures

- Why Use An Accredited Laboratory?
- Why Become An Accredited Laboratory?
- How Does Using an Accredited Laboratory Benefit Government & Regulators?
- The Advantages of Being An Accredited Laboratory

http://www.ilac.org/ see Publications
available in English, Russian, Japanese, Spanish, Chinese

NVLAP Programs for Information Technology Security Testing



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