



INTERNATIONAL WORKSHOP

Overview on Standardization PETROBRAS and BRAZIL

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by

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NORTEC



1 - BASIS

“CORPORATE GUIDELINES FOR THE TECHNICAL STANDARDIZATION IN PETROBRAS”


WHY – TO RECORD THE COMPANY’S KNOW-HOW


WHEN – NO EXISTENCE OF INTERNATIONAL / REGIONAL / NATIONAL STANDARDS
 – NEW TECHNOLOGIES


WHAT FOR – TO FACILITATE COMPANY’S ACTIVITIES

- TO FACILITATE JOINT ACTIVITIES (PARTNERSHIP)
- TO REDUCE COST/TIME
- TO IMPROVE HSE

2 - STRUCTURE

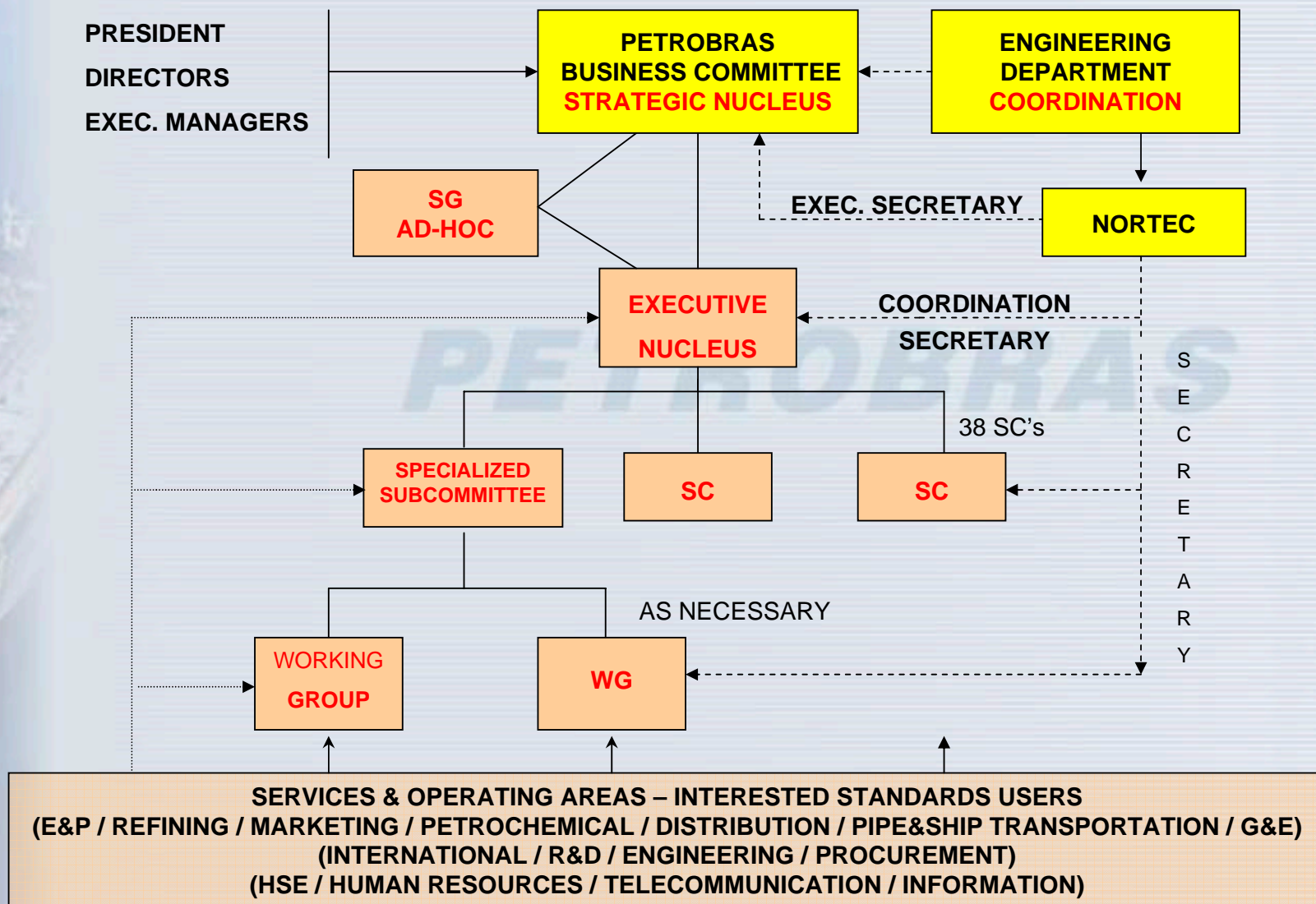
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COORDINATION - ENGINEERING DEPARTMENT

- 
CONTEC - TECHNICAL STANDARDIZATION COMMISSION - CREATED IN 1966

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NORTEC - TECHNICAL STANDARDIZATION MANAGEMENT - CREATED IN 1988



2 - STRUCTURE



NORTEC
ISO 9001

3. MEMBERSHIP

EXECUTIVE NUCLEUS

- ENGINEERING
- REFINING
- PETROCHEMICAL
- R&D
- TRANSPORTATION
- INFORMATION
- INTERNATIONAL
- PROCUREMENT
- MARKETING
- HSE
- DISTRIBUTION
- E&P
- G&E
- BR UNIVERSITY



3. MEMBERSHIP

- SC - SPECIALIZED SUBCOMMISSION
 - INTERESTED STANDARDS USERS

- WG - WORKING GROUP
 - SPECIALIZED TEAM

- SG - SPECIAL GROUP
 - AD-HOC

- NORTEC - TECHNICAL STANDARDIZATION MANAGEMENT
 - TECHNICAL, FINANCIAL AND ADMINISTRATIVE SUPPORT
 - 30 EMPLOYEES



4. STANDARDS

NUMBER OF STANDARDS (AUG/2006)

- PORTUGUESE = 844
- ENGLISH = 286
- SPANISH = 78
- TOTAL = 1.208

AREAS COVERED BY THE STANDARDS

SC-01 Chemical Products and Fluid Systems for Oil Exploration and Production

SC-02 Tanks & Vessels

SC-04 Construction

SC-05 Marine Installations and Operations



- SC-06 Electricity***
- SC-08 Fired Heaters***
- SC-09 Thermal Insulation and Refractory Materials***
- SC-10 Instruments and Industrial Automation***
- SC-11 Machines***
- SC-12 General Design Standards***
- SC-13 Oil & Gas Pipeline***
- SC-14 Painting and Anti-Corrosive Coatings***
- SC-15 Cathodic Protection***



SC-16 Industrial Safety

SC-17 Industrial Piping

SC-20 Laboratory Methods

SC-21 Materials and Equipments for Drilling and Oil Production

SC-22 Utilities Equipment

SC-23 In-Service Inspection of Systems and Equipment

SC-26 Welding



SC-27 Non-Destructive Testing

SC-28 Explosives & Starters

SC-30 Reservoirs

SC-31 Telecommunications

SC-32 Quality Systems

SC-33 Data Processing & Telecommunication

SC-34 Environment

SC-35 Occupational Health

SC-36 Reliability and Industrial Risks

SC-37 Well Safety

SC-38 Energetic Efficiency & Alternative Energy

5. PEOPLE AND COST

MAN HOUR (SC, WG, EN)

- 2003 = 13.614 (7,7 PEOPLE/YEAR)
- 2004 = 15.500 (8,8)
- 2005 = 12.435 (7,1)

OBS.: 1.760h/MAN/YEAR

BUDGET

- 2004 = US\$ 1,0 M
- 2005 = US\$ 2,0 M
- 2006 = US\$ 3,1 M



6 – STANDARDS PUBLISHED 2005 (371)

IDIOM

- PORTUGUESE = 281
- ENGLISH = 65
- SPANISH = 25

TYPE

- NEW = 17
- REVISED = 28
- REVALIDATED = 118
- CANCELLED = 66
- AMMENDED = 52



7 – STANDARDS TO BE PUBLISHED IN 2006

IDIOM

- PORTUGUESE = 276
- ENGLISH = 71
- SPANISH = 28

TYPE

- NEW = 35
- REVISION = 111
- REVALIDATION = 30
- CANCELLATION = 72
- AMENDMENT = ?



8 – ADOPTION OF EXTERNAL STANDARDS

THE WAYS TO ADOPT EXTERNAL STANDARDS

- DIRECT FROM ISO AND IEC
- WITH SOME MINOR MODIFICATIONS – USUALLY FROM ISO, IEC, ABNT, API, ASTM, ASME AND SOME OTHER NATIONAL STANDARDS (OTHER COUNTRIES)
- ALL OF THOSE AS REFERENCE DOCUMENTS

OBS.: ACCORDING WITH THE GUIDELINES, NO PETROBRAS STANDARD IS PRODUCED IF ANY OF THOSE STANDARDS FIT THE COMPANY'S NECESSITIES



9 – PETROBRAS – ABNT AGREEMENT

PURPOSE

- TRANSFER PETROBRAS STANDARDS TO ABNT TO TRANSFORM IN TO NBR, ISO, IEC OR COPANT STANDARDS

HOW LONG

- 6 YEARS

HOW MUCH

- US\$ 1,4 M

WHERE NOW

- SIGNED FEB/2006
- IMPLEMENTED

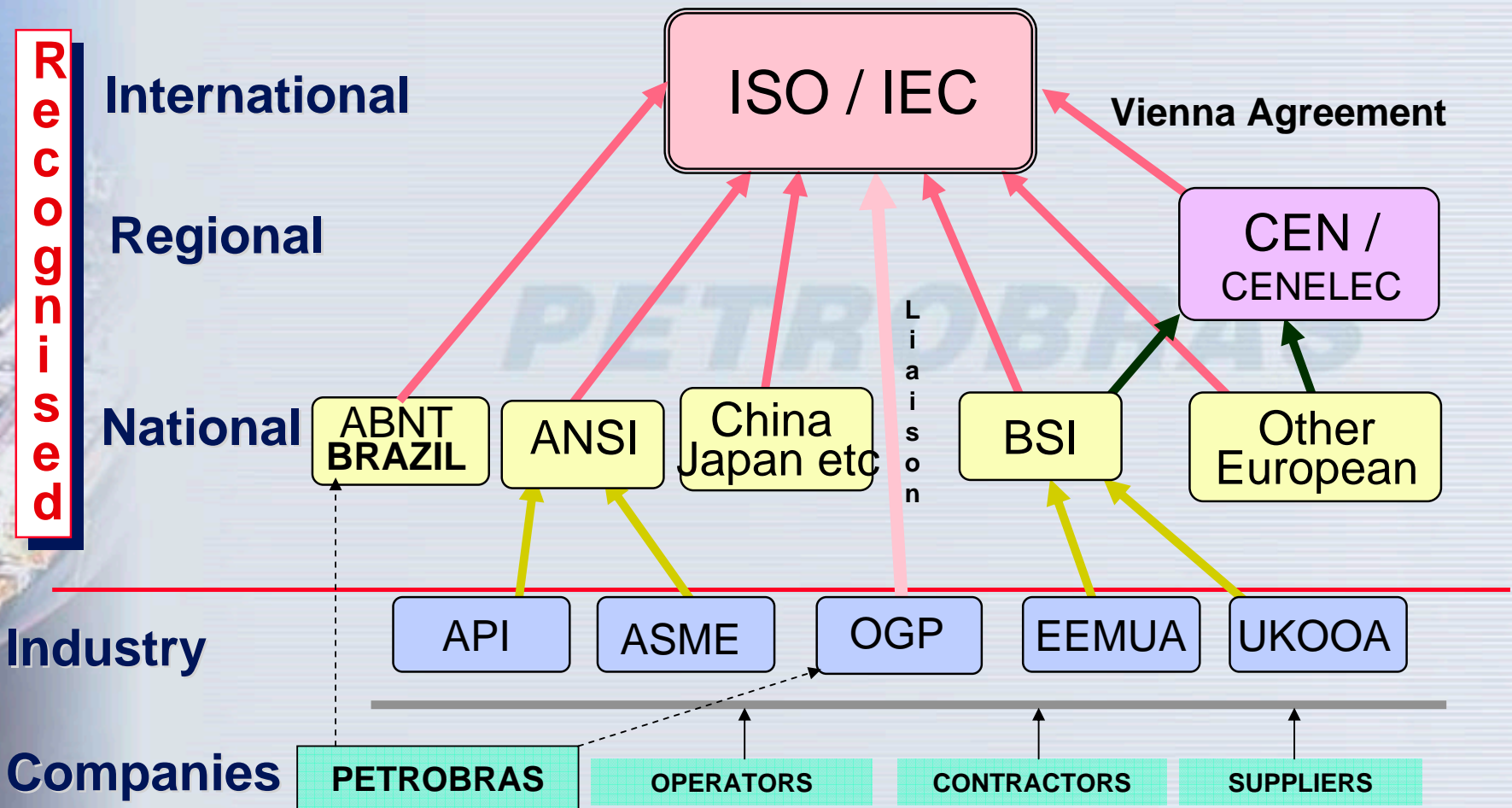


10 – EXTERNAL PARTICIPATION

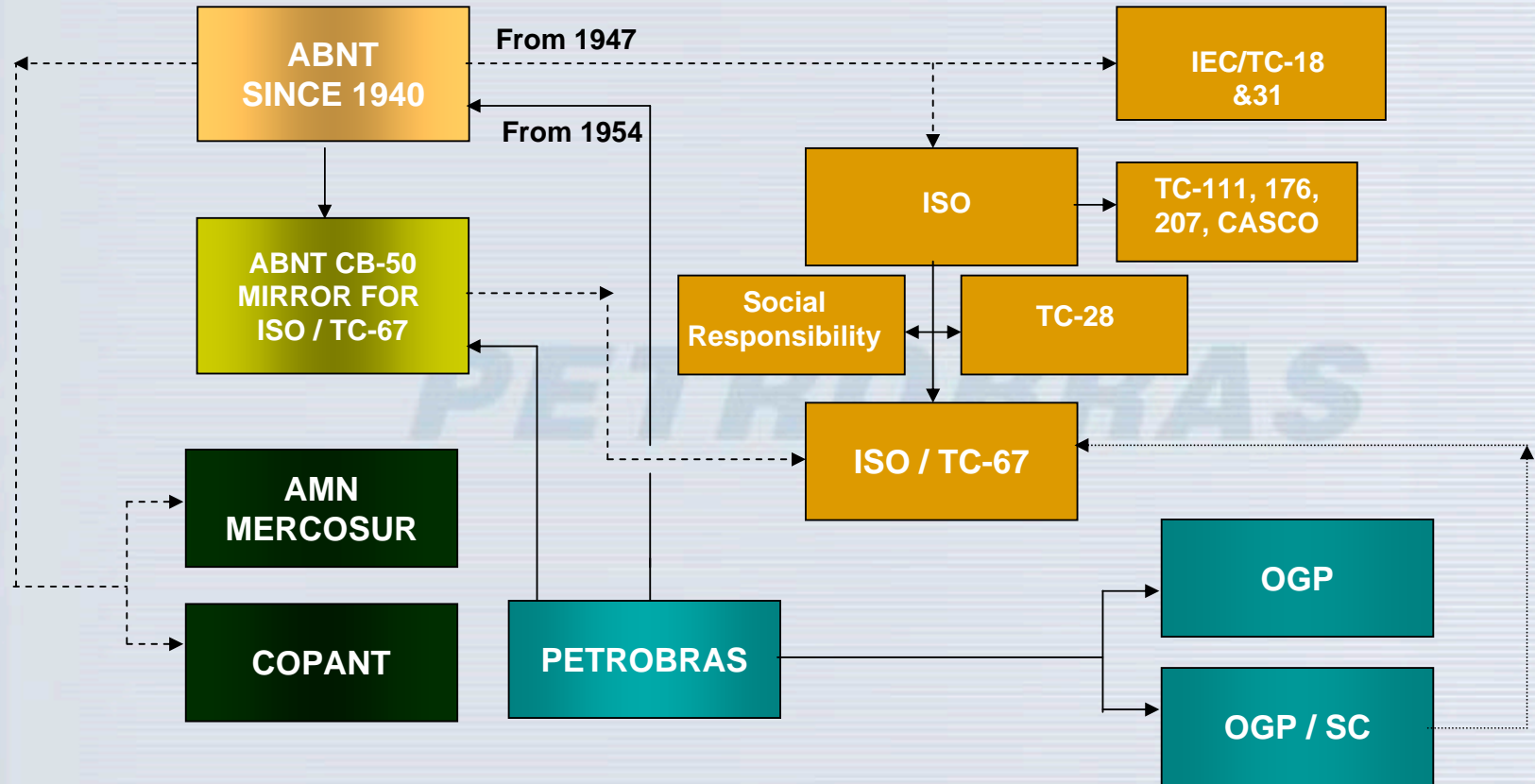
- ☐ **CONMETRO/CBAC and CBs**
- ☐ **ABNT COUNCIL**
- ☐ **ABNT COMMITTEES (about 30)**
- ☐ **ISO (Representing ABNT)**
 - TC-67 OIL, GAS, PETROCHEMICAL
 - TC-176 QUALITY
 - TC-193 LABORATORY
 - TC-207 ENVIRONMENT
- ☐ **IEC (Representing ABNT)**
 - TC-18 ELECTRIC NAVAL INSTALLATIONS & MOBILE/FIXED MARITIME INSTALLATIONS
 - TC-31 ELECTRIC APPARATUS FOR HAZARDOUS AREAS
- ☐ **ASTM (Representing Petrobras)**
- ☐ **ASME (Representing Petrobras)**
- ☐ **API (Representing Petrobras)**
- ☐ **OGP (Representing Petrobras)**
- ☐ **OGP/SC (Representing Petrobras)**



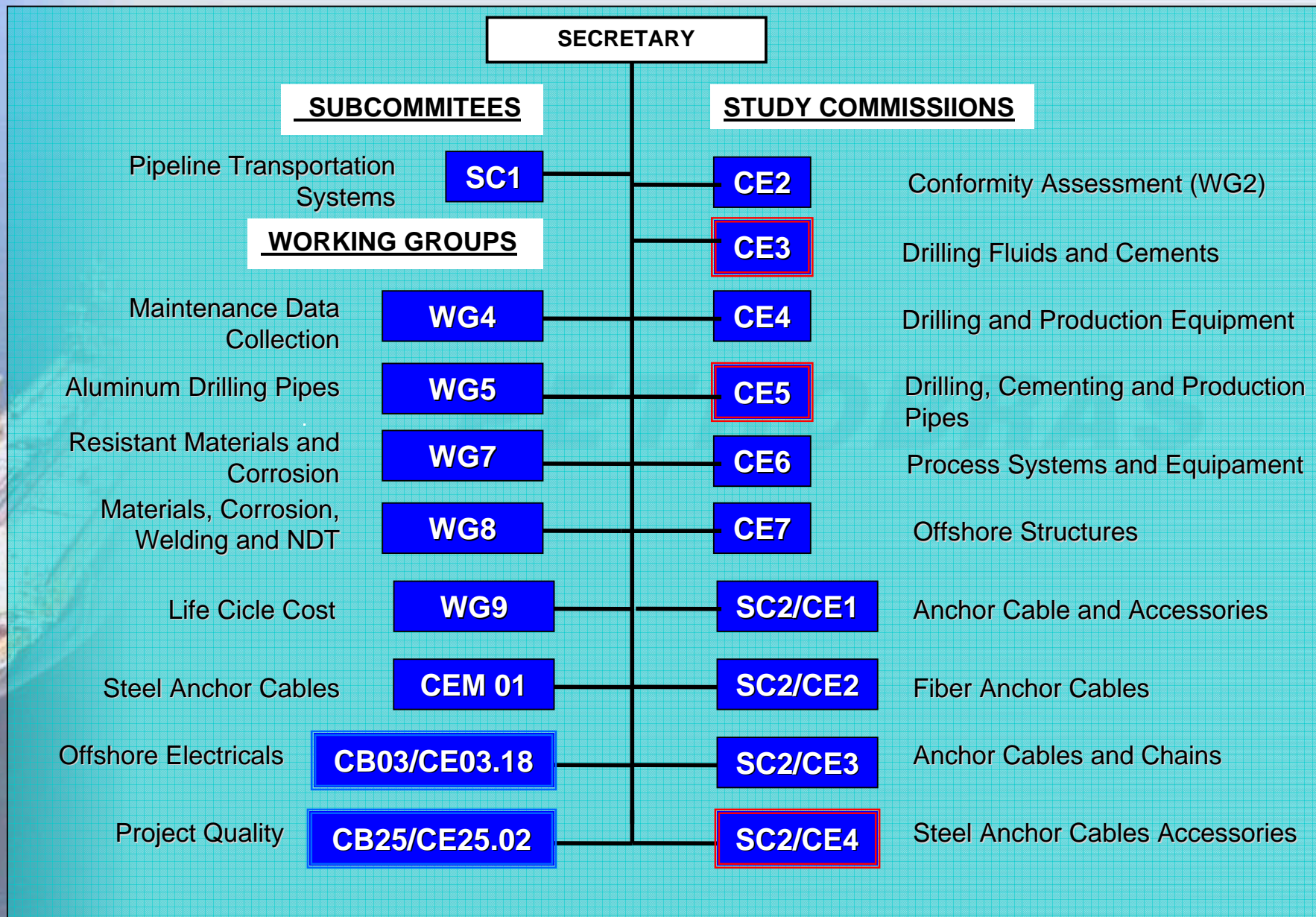
11 – STANDARDIZATION BODIES RELATIONSHIP



12 – NATIONAL VIEW



13 – STRUCTURE ABNT / CB-50



14 – OIL, GAS & BIO-FUELS AGENCY (ANP)

SPECIFIC REGULATIONS

- OFF-SHORE ACTIVITIES
- ON-SHORE ACTIVITIES
- PUMP STATION (RETAIL)

METHODS AND PRODUCT SPECIFICATION

- ISO/ABNT STANDARDS
- ABNT STANDARDS (MAINLY IBP)
- ASTM, API STANDARDS
- OTHER STANDARDS

PARTICIPATION

- CONMETRO/CBR (REGULATION)
- CONMETRO/CBN (STANDARDIZATION)
- ABNT/CB-50 (MIRROR FOR ISO/TC-67)
- ABNT/ONS-34 (MIRROR FOR ISO/TC-28)



15 – OTHER REGULATORS

DIRECT LAGISLATION FROM

- LABOR AND EMPLOYMENT MINISTRY
- HEALTH MINISTRY
- ENVIRONMENT MINISTRY
- TRADE AND INDUSTRY MINISTRY
- INTERNAL AFFAIRS MINISTRY
- MINING AND ENERGY MINISTRY
- LABOR SECURITY MINISTRY

OBS.: MANY AGENCIES FROM THEM



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