EUROLAB

European Federation of National Associations of Measurement, Testing and Analytical Laboratories

Álvaro S. Ribeiro
President of EUROLAB aisbl

11th EURAMET General Assembly Week
Madrid, Spain, 15-19 May 2017

EUROLAB aisbl basics

27th of April of 1990

Vision

“ When a group of Directors of eminent public and private laboratories took the initiative to create **Eurolab** back in 1990, they shared a common vision: the European harmonized internal market could only prosper based on improving the quality and safety of products, goods and the environment, both to serve the European Citizens and to improve the competitiveness of European companies and services on world market ”.

Alan Bryden (EUROLAB President 1990-1994),
Eurolab 25th Anniversary Book

1st EUROLAB General Assembly, 1990

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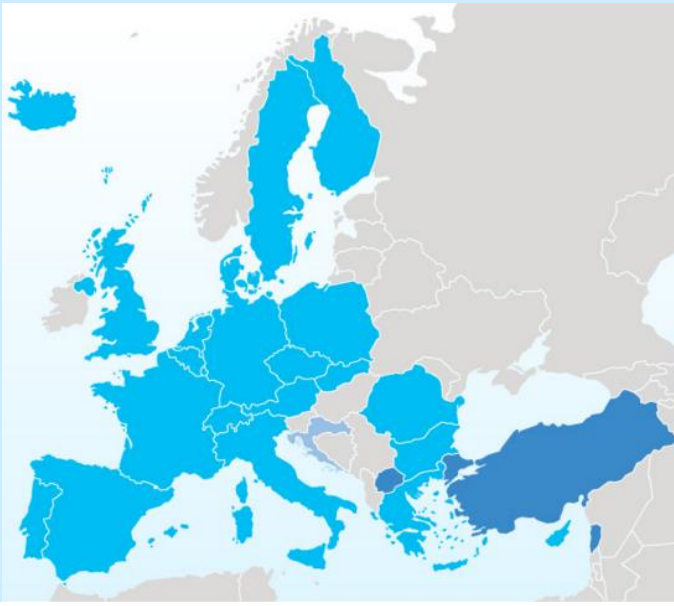
Added-value & networking

EUROLAB's general objective is to promote cost-effective testing, calibration and measurement, services, for which the accuracy and quality assurance requirements are adjusted to the actual needs.

EUROLAB represents testing, measurement and calibration laboratories and has 21 Active Members, 3 Associated Members, 1 Observer Member and 2 International Affiliates.

Grouping over **2,000** conformity assessment bodies representing **over 100,000** technical experts and laboratory practitioners.



Active Members			
Austria	AUSTROLAB	Iceland	Icelandic Fisheries Labs
Belgium	BELAB	Italy	ALPI
Bulgaria	BULLAB	Netherlands	FENELAB
Croatia	CROLAB	Poland	POLLAB
Cyprus	CYPRUSLAB	Portugal	RELACRE
Czech Republic	EUROLAB-CZ	Romania	EUROLAB Romania
Denmark	EUROLAB Danmark	Romania	ROLAB
Finland	EUROLAB Finland	Spain	EUROLAB-España
France	EUROLAB France	Sweden	EUROLAB-Sverige
Germany	EUROLAB Deutschland	Switzerland	EUROLAB-CH
Greece	HELLASLAB	UK	BMTA

Associated members			
FYROM	MAKLAB	Turkey	TURKLAB
Lebanon	LEBLAB		

International affiliates			
CEC	CEN	South Africa	NLA
CENELEC	CEOC International	USA	NCSLI
EA	EARTO	EFNDT	EFTA
EGOLF	Eurachem	EURAMET	Eurocer Building
Nordisk Innovations Centre			

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Added-value & networking

EUROLAB key objectives:

Representation by formulating and voicing the opinion of laboratories regarding economic, political and technical issues having a direct impact on laboratories' activities both on the European scene and world-wide.

Co-ordination by interfacing with organisations having activities of interest to the laboratory community, and striving to avoid duplication of efforts and activities.

EUROLAB should be the major multisectorial and horizontal forum for the circulation and exchange of information and experience in development of:

- Test, measurement and analytical methods
- The use of test and analytical results in the implementation of legislation and directives, in product certification and acceptance, and in technical evaluations
- New measurement and testing techniques for example within the EC framework programmes, as well as
- Quality assurance measures

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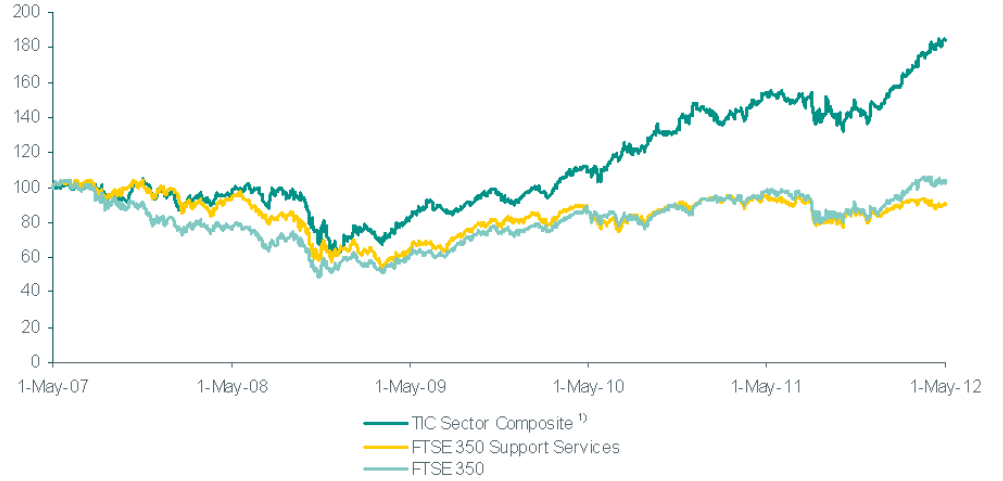
EUROLAB and the TIC Sector

Attractiveness acknowledged by stock market

1 2 3 4 5

5 year share price performance (indexed)



1) TIC sector composite based on: SGS, BV, Intertek, SAI Global, Eurofins, Campbell
Source: date as of May 11, 2012; Factset, Company info, ABN AMRO analysis

ABN·AMRO

CEOC

Industrial Services | INDUSTRIAL CAPITAL STRATEGIES

Testing, Inspection and Certification Industry: Merger & Acquisition Activity Remains High

Meet us at NDTMA Las Vegas or the 18th World Conference on NDT in Durban

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Following a brief slowdown in transaction activity in 2009, M&A activity in the TIC industry has accelerated. Market sentiment and spending remained strong throughout the year, maintaining the momentum for growth in 2011 that started in 2010. This bodes well for the selling shareholders of privately owned companies participating in industry consolidation. As an example, five industry majors alone, Bureau Veritas, Dekra, Eurofins, Intertek and SGS spent a combined $3.6 billion completing more than 195 bolt-on acquisitions from 2006 through 2010.[1] In 2011 they closed an additional 33 add-on acquisitions. So important are these add-on acquisitions that they added over $2.2 billion in revenues, constituting between one-fifth and one-half of annual top line revenue growth for these companies.2 In its four-year strategic plan unveiled in September 2010, SGS calls for about $700 million in additional revenues as a result of acquisitions by 2014 and a capital expenditure program totaling over $500 million. In its strategic plan for 2015 Bureau Veritas plans to have global revenue of around €5 billion and 80,000 employees (from €3 billion and 50,000 today); this includes extending its services offering in attractive market segments such as food safety, upstream inspection for the oil industry (drilling, offshore, LNG) and in renewable energies. Bureau Veritas plans to remain a major consolidating player by pursuing a strategy of targeted acquisitions, with a third of its growth being non-organic, i.e. via acquisition.

Testing, Inspection and Certification ("TIC") companies provide services to a diverse range of end markets, including agriculture, automotive, commodities, consumer, environmental, food, life sciences, industrial, maritime, medical, oil & gas, petrochemical, systems compliance and trade assurance. Services include quality and safety services such as product performance evaluations, certification and valuation of shipments, ensuring imports comply with relevant standards, industrial inspections including maintenance turnarounds, systems certification, supplier evaluation and laboratory outsourcing.

The recent oil pipeline leak in the Yellowstone River, the rupture of a gas pipeline in California, food safety scares, toy safety issues and international trade security concerns all underscore the importance of the TIC industry. The global TIC industry is estimated to be worth $200 billion annually; half in the global supply chain, and half of a regional statutory nature.

Robust demand growth: Following the recent slowdown and dramatic recovery in international trade, several other factors support the continued growth of the TIC industry:

- Continual introduction of new regulations, for example energy efficiency in construction
- Globalization of international standards
- Increased outsourcing of inspection and verification services
- Improved risk awareness and focus on risk prevention
- Manufacturing migration and shorter product life cycles
- End user demand seeking third-party assurance
- Improved safety legislation and standards

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EUROLAB and the TIC Sector

Three Year Acquisition History for Selected Players in the TIC Industry

Aggregate EV ($mm)	Average EV ($mm)	Company	Number of Deals
1,100.0	110.0	Eurofins	45
10.3	10.3	SGS	32
609.0	609.0	Bureau Veritas	19
65.4	21.8	Exova	12
574.1	95.7	Intertek Group	11
1.7	1.7	DEKRA	10
18.2	9.1	Applus Services	8
N/A	N/A	DNV GL Group	8
6,030.1	3,015.0	Laboratory Corp. of America	7
198.9	198.9	TÜV SÜD	7
N/A	N/A	National Technical Systems	6
N/A	N/A	Institut Mérieux	6
N/A	N/A	UL LLC	6
2.0	2.0	Trescal	6
11.2	11.2	ALS	5

Note: Three years ended September 30, 2016; Aggregate and Average EV figures include transactions where data is available
Source: Capital IQ

186 M&A

Top 3: 96 deals

Top 5: 64%

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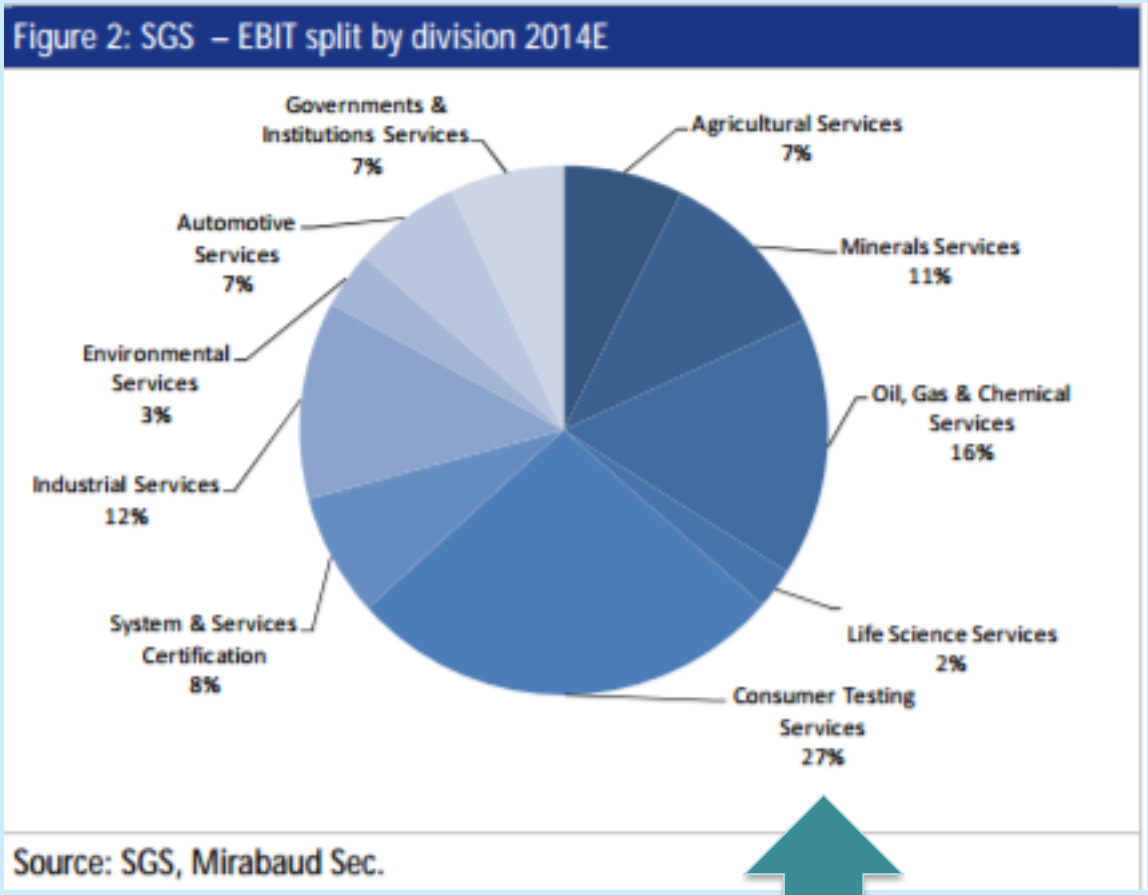
Mirabaud Report, SGS



EBIT – Earnings Before Interest & Tax

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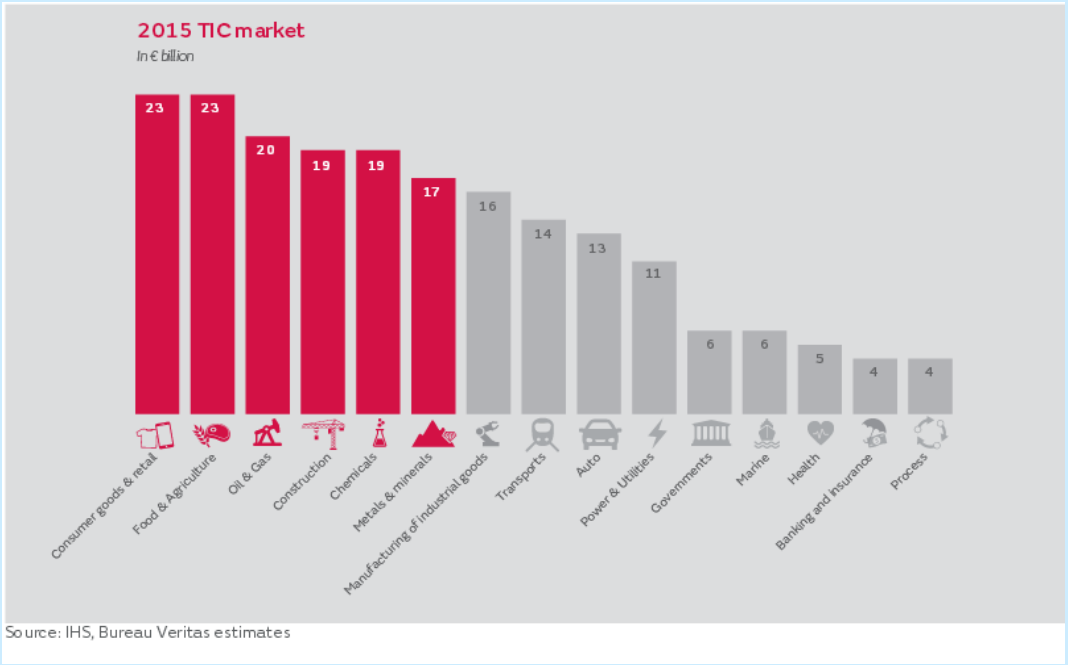
EUROLAB Policy Paper

Testing and inspection services support the quality and safety of products through product performance evaluations. For placing a product falling in the scope of a regulation on the market in nearly all countries a proof of conformity with the regulation is required.

EUROLAB Policy Paper



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Credits: Bureau Veritas

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Today's challenges

Recognition of Competence & Confidence

Accreditation & Certification

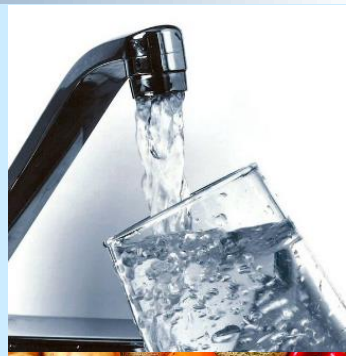
Directives & Legislation

Conformity Assessment

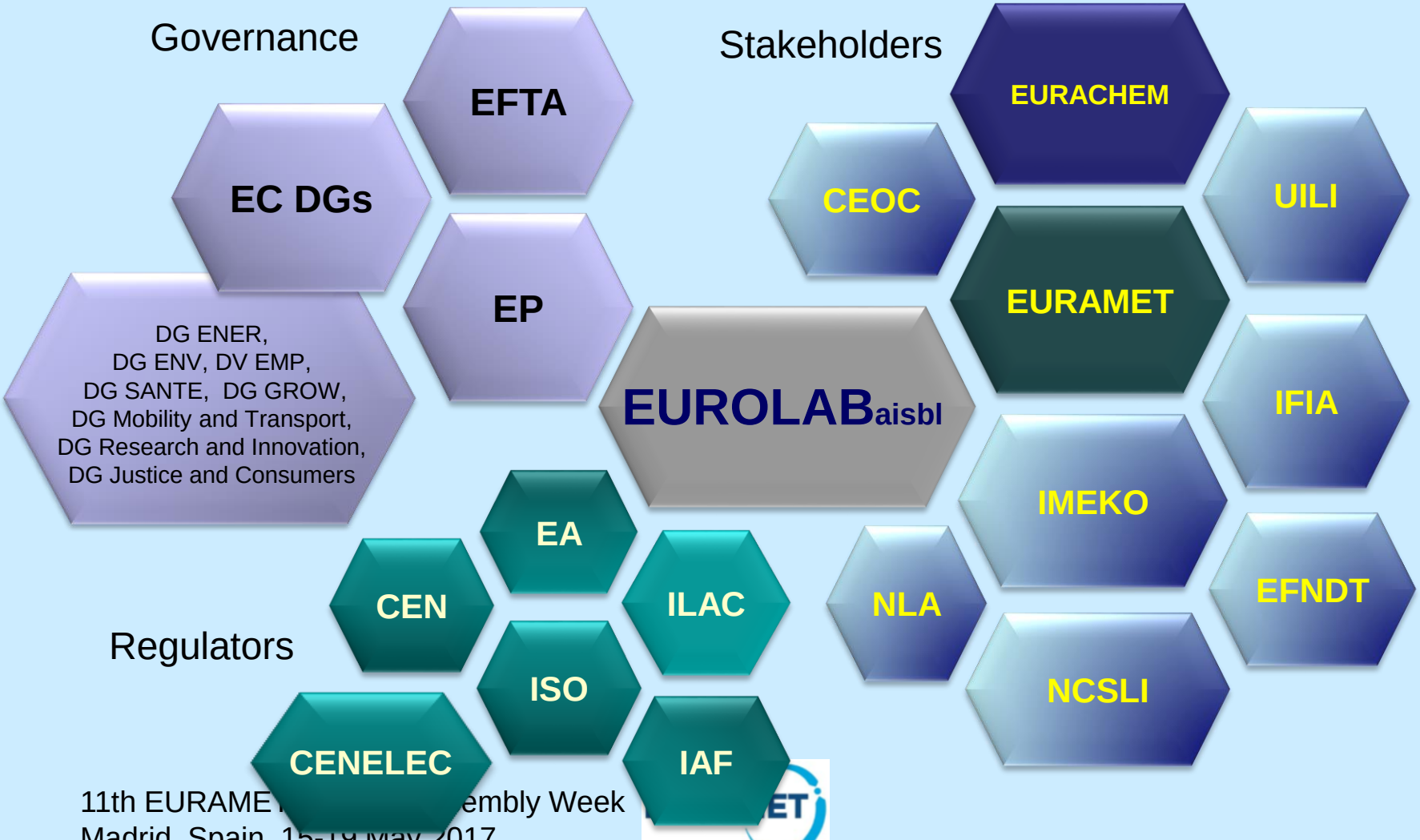
Marking & Recognition

Standards & Tolerances

Measurement & Testing



Dialogue with European & International Institutions



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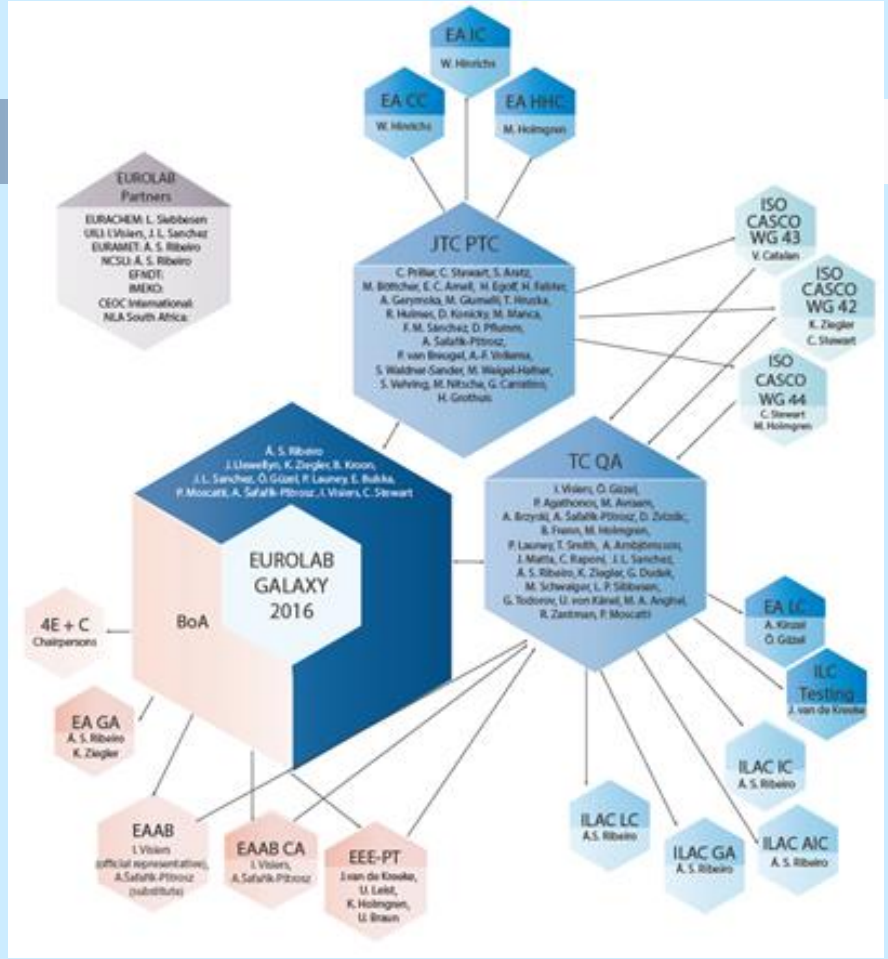
Representing the Labs Community

Relations and MoUs with stakeholders:

- European Commission DG's
- EFTA
- ISO
- ILAC and IAF
- EA
- CEN
- CENELEC.

With more than 30 representatives in european and international committees



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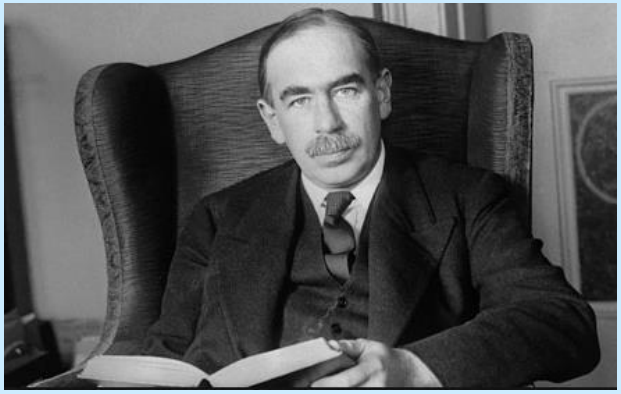
Perspectives: 2017 plus

"The difficulty lies not so much in developing new ideas as in escaping from old ones."

John Maynard Keynes



Perspectives: 2017 plus

REUTERS Robots, new working ways to cost five million jobs by 2020, Davos study sa...

DAVOS | Mon Jan 18, 2016 | 5:01am EST

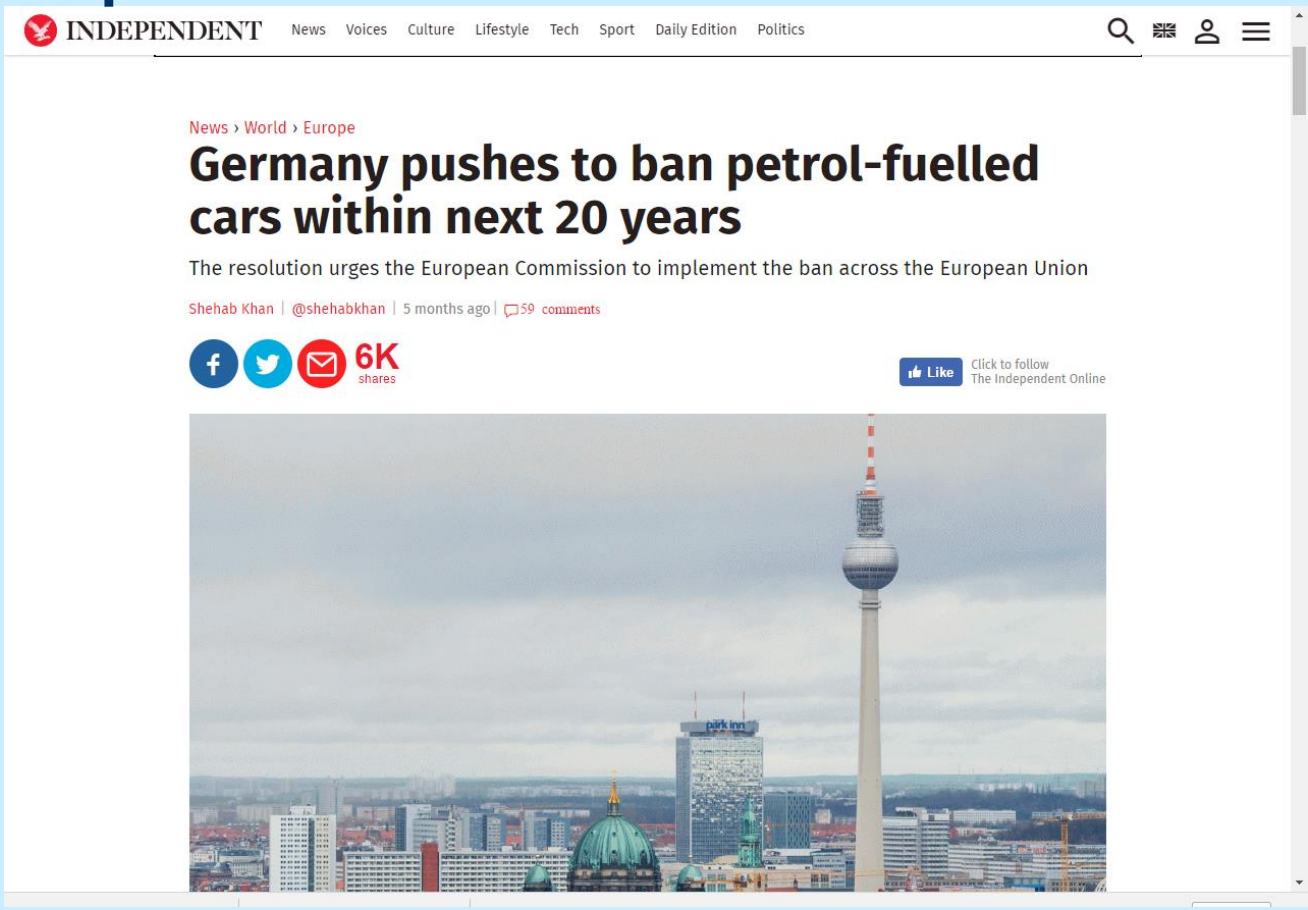
Robots, new working ways to cost five million jobs by 2020, Davos study says

Staff program a robot arm by Nachi Robotic Systems at the International Robot Exhibition in Tokyo, Japan December 2, 2015. REUTERS/Thomas Peter

Disruptive labor market changes, including the rise of robots and artificial intelligence, will result in a net loss of 5.1 million jobs over the next five years in 15 leading countries, according to an analysis published in Davos on Monday.

The projection by the World Economic Forum (WEF), which is holding its annual meeting in the Swiss ski resort this week, assumes a total loss of 7.1 million jobs, offset by a gain of 2 million new positions.

Perspectives: 2017 plus



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Germany pushes to ban petrol-fuelled cars within next 20 years

The resolution urges the European Commission to implement the ban across the European Union

Shehab Khan | @shehabkhan | 5 months ago | 59 comments

6K shares

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Perspectives: 2017 plus

3. Industry going digital

Twelve potentially disruptive technologies in the coming decade – half of them digital and related to Industry 4.0

Mobile Internet	Increasingly inexpensive and capable mobile computing devices and Internet connectivity
Automation of knowledge work	Intelligent software systems that can perform knowledge work tasks involving unstructured commands and subtle judgments
The Internet of things	Networks of low-cost sensors and actuators for data collection, monitoring, decision making, and process optimization
Cloud technology	Use of computer hardware and software resources delivered over a network or the Internet, often as a service
Advanced robotics	Increasingly capable robots with enhanced senses, dexterity, and intelligence used to automate tasks or augment humans
Autonomous and near-autonomous vehicles	Vehicles that can navigate and operate with reduced or no human intervention
Next-generation genomics	Fast, low-cost gene sequencing, advanced big data analytics, and synthetic biology ("writing" DNA)
Energy storage	Devices or systems that store energy for later use, including batteries
3D printing	Additive manufacturing techniques to create objects by printing layers of material based on digital models
Advanced materials	Materials designed to have superior characteristics (e.g., strength, weight, conductivity) or functionality
Advanced oil and gas exploration and recovery	Exploration and recovery techniques that make extraction of unconventional oil and gas economical
Renewable energy	Generation of electricity from renewable sources with reduced harmful climate impact

McKinsey & Company | 7

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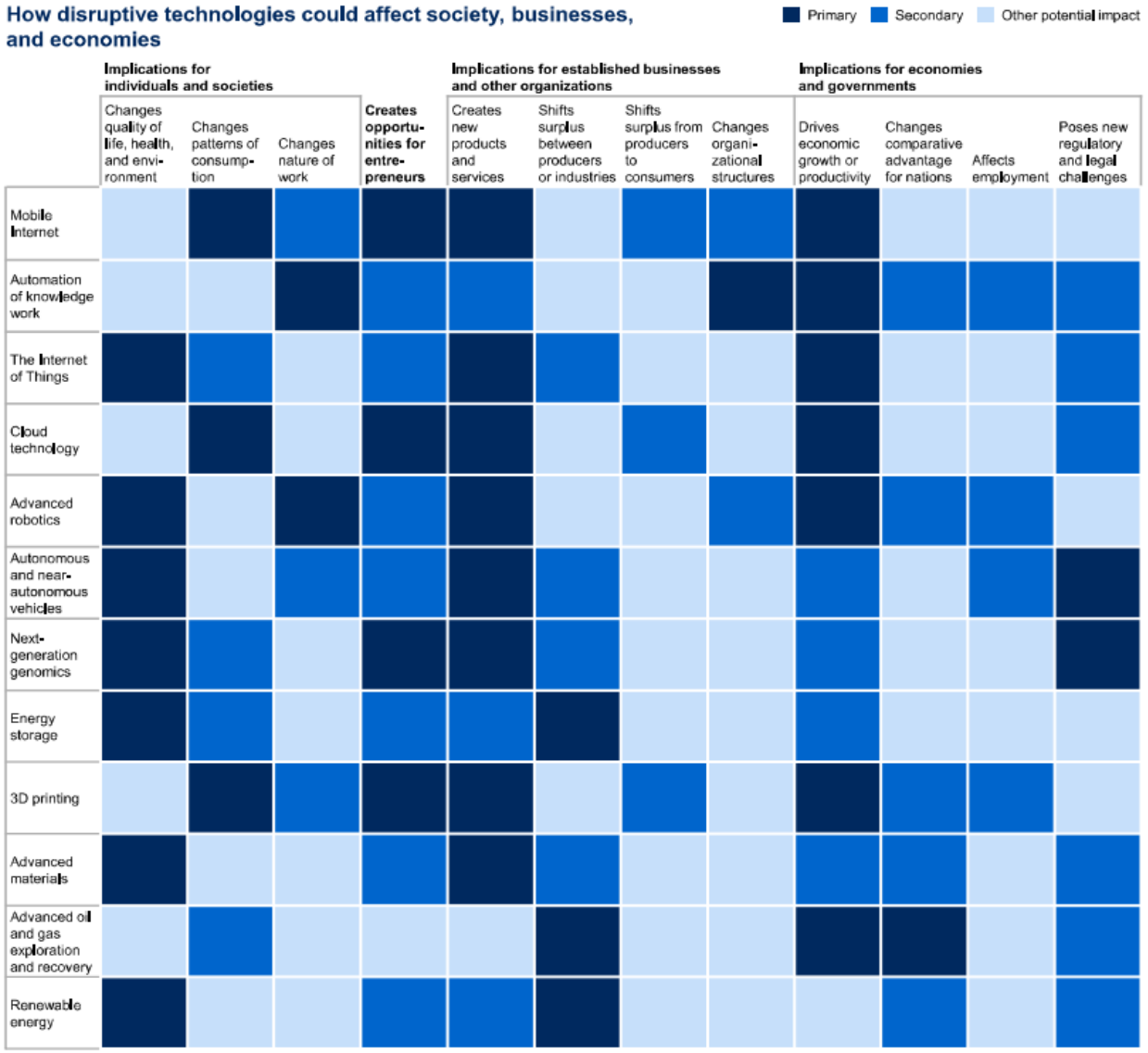
Exhibit E6

How disruptive technologies could affect society, businesses, and economies



SOURCE: McKinsey Global Institute analysis

Perspectives: 2017 plus

EC increasing impact of European Legislation, Regulation and Decisions

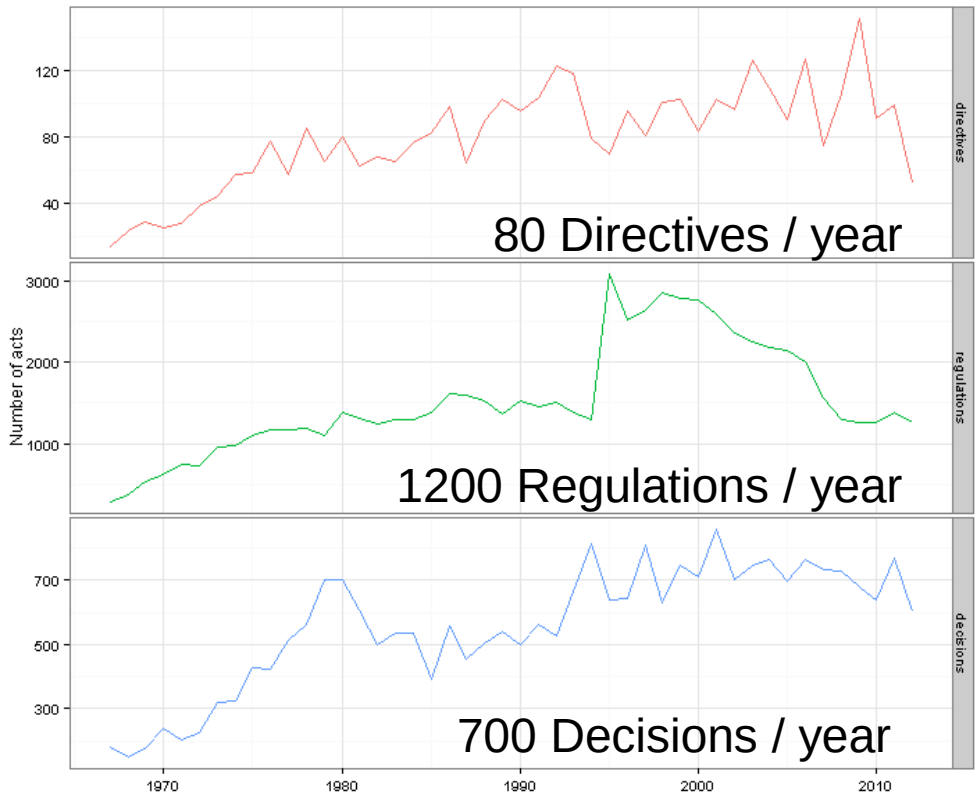


Figure 1

shows the number of directives, regulations and decisions adopted by the EU from 1967 till 2012.

1. EU legislation comes in three main forms: `directives`, `regulations`, and `decisions`. Directives are the most important and most general of the three. There are many important regulations as well, but usually regulations have a more narrow focus and limited application time. Decisions are the least general of the three. Directives are like real laws, and regulations and decisions are like government decrees.

We see that the annual number of legislative acts adopted by the EU has been steadily growing till the mid-1990s, but afterwards the growth has slowed down, and for regulations has been reversed. Nowadays, the EU approves on average `80` directives, `1200` regulations and `700` decisions per year. **Still quite a lot!** And look at the wild yearly variation in the number of directives adopted after 2000!

Source: D. Toshkov
55 years of European Legislation

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"There is no science without measurements, no quality without testing and no global market without standards."

European Commission, **Measurement and Testing, A European research area oriented activity, High Level Expert Group**

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ILAC LC Survey on harmonization and consistency of Accreditation

ILAC LC Meeting in New Delhi, 2016 - Decisions

- Assure confidentiality of Laboratories answers
- Prepare a White Paper on “harmonization and consistency of Accreditation” to present in IAF-ILAC Vancouver meetings in 2017
- Develop a survey to support the White Paper and to obtain good examples
- Define parameters able to provide informations regarding today’s satisfaction and evolution of Accreditation worldwide

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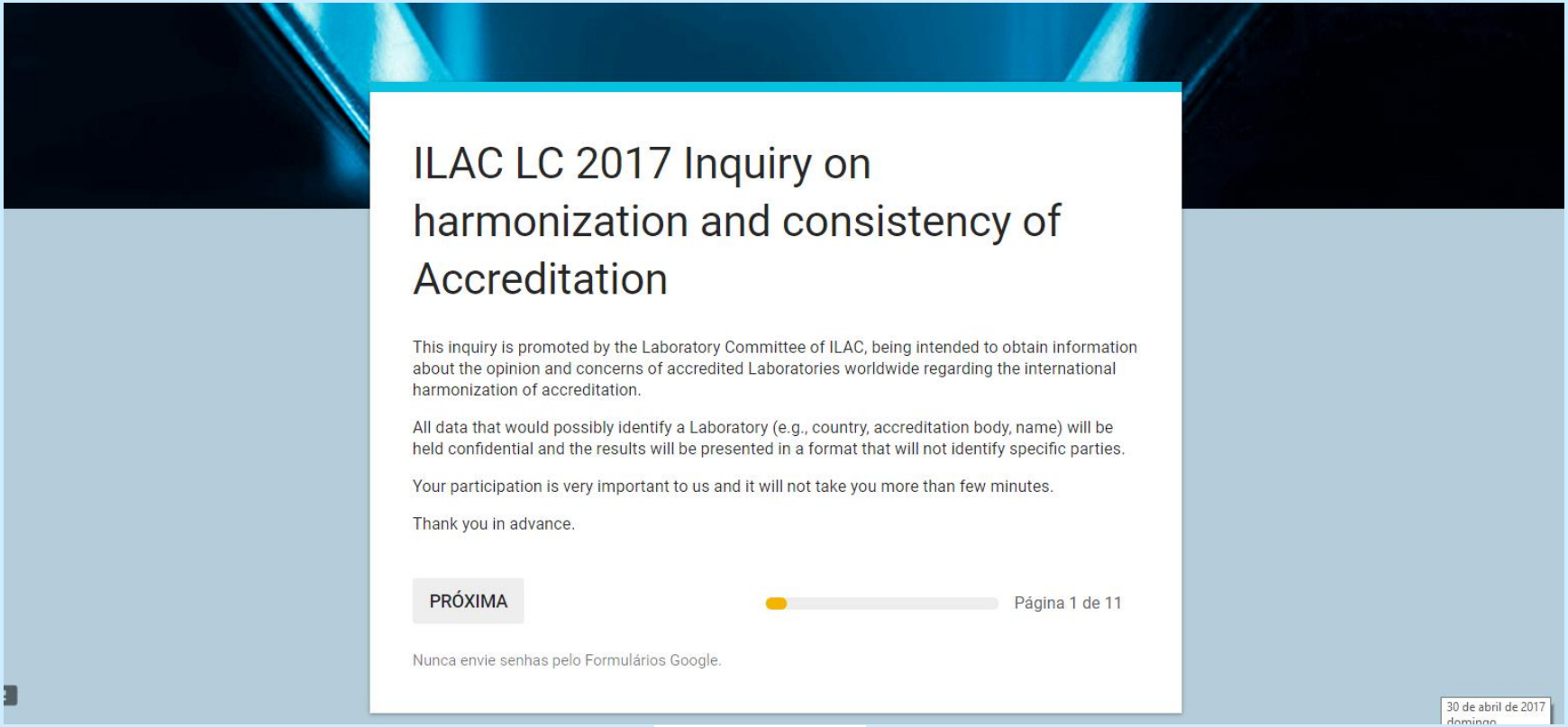
ILAC LC – Aim of Survey and online link

link: https://goo.gl/OdmfT6



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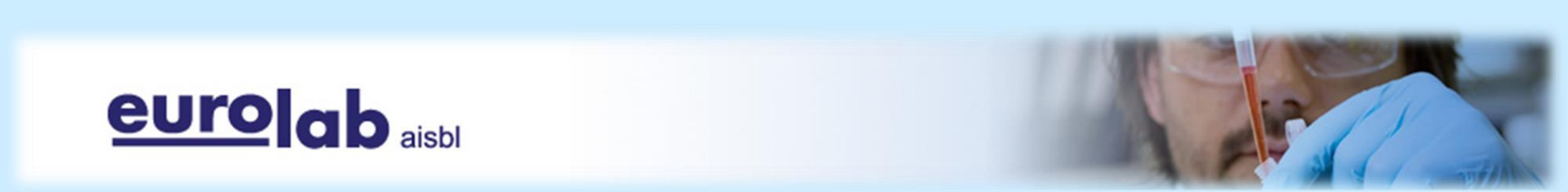

ILAC LC – Key issues to promote a better harmonization and consistency of Accreditation

a – Scope definition

b – Cycle and frequency of assessment

c – Quality of Assessment

d – Translation barriers

e – Non uniform interpretation of ISO 17025 at national levels by ABs

f – AB Policies

g - Use of PT/ILC and similar Quality Control tools in Assessment

h - Lack of Recognition of ILAC MRA

Final remarks

EUROLAB aisbl & Labs Community:

- **Share ideas, define common goals an build a strong network for cooperation.**
- **Measurement & Testing assure safety and quality of life.**

International Forum for the Laboratory Community

Thank you for your kind attention!

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