



International Survey on Somatic Cell Counting- Situation of lab network organization and practices

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on behalf of the

IDF/ICAR Project Group

What's the PG Ref Sys SCC?

It is a PG under the aegis of ICAR and IDF

- **28 Members**
- **19 Countries**
- **4 Continents**

**It would like to promote
“equivalence” in SCC counting**

Why have we started from SCC ?

SCC

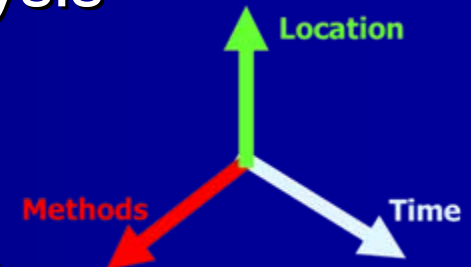
economical aspects

- Widely used test : > 500 000 000 test/year
- Indicator for udder health status (Farm Management)
- Criterion for hygiene regulation (Food Legislation e.g. EU 853/2004) and raw milk payment
- Breeding programs

In the global dairy market, operators need standards for milk quality control



- International trade requires analysis and quality control results
- Results need to be comparable between labs, between countries



Everywhere ! Every method ! Every time !

How to realize Ref.Sys.SCC ?

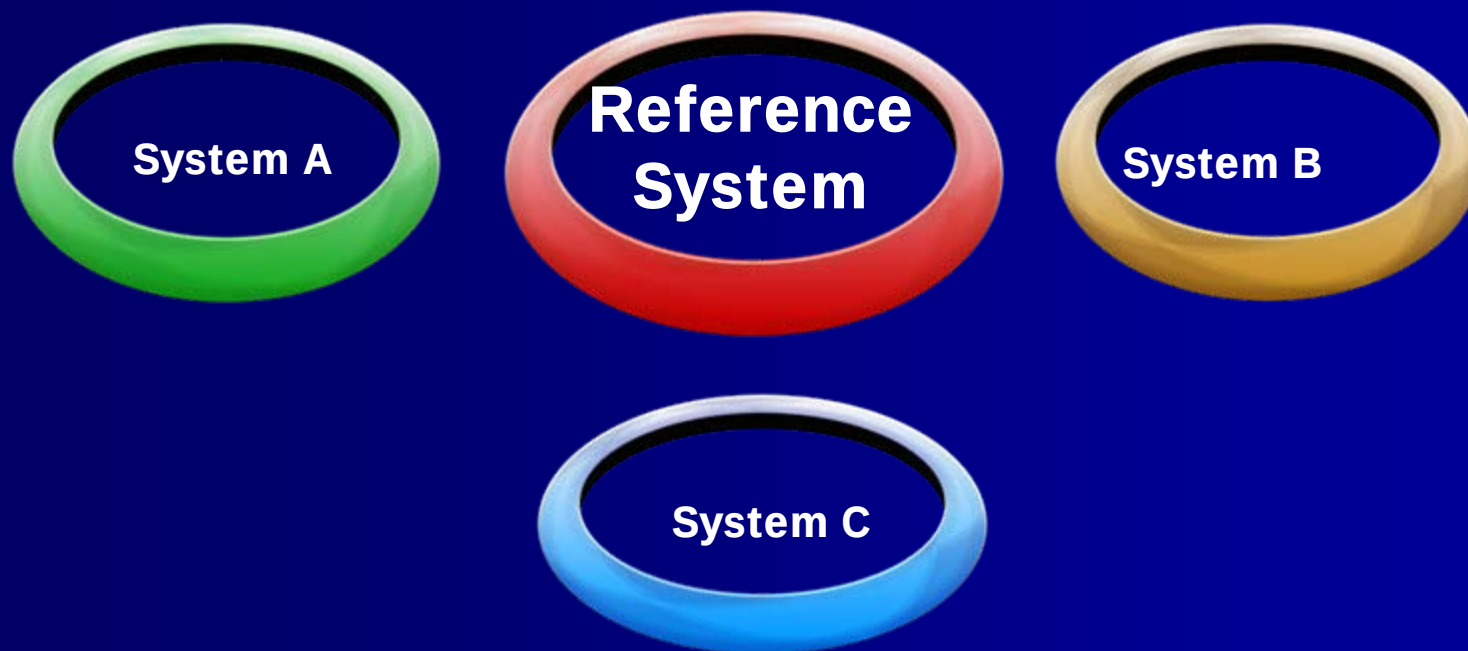
Main steps.....

- Identify existing « **local analytical systems** »
 - Reference materials' specifications $\Rightarrow$ RM providers
 - Calibration practises $\Rightarrow$ RM users (routine labs)
 - PT schemes

AFTERWARD

- Guarantee quality of reference and routine data (competence of contributing labs)
- Develop a data processing model
- Enhance a pilot study

Why have we to identify different analytical systems ?



Identified interlinkages between existing local reference systems can form the basis for a **'bottom up'** approach

Optimize and interlink the existing systems and evaluate eventual bias

⇒ **To become gradually a global Reference System !**

How to collect data.....

International surveys !!!
Reference material producers

Routine laboratories

**In 2010 it was launched and we have
received answers from**

13 providers
11 from Europe
2 from AMERICA

BOTTOM UP APPROACH!

International surveys !!!

Reference material producers

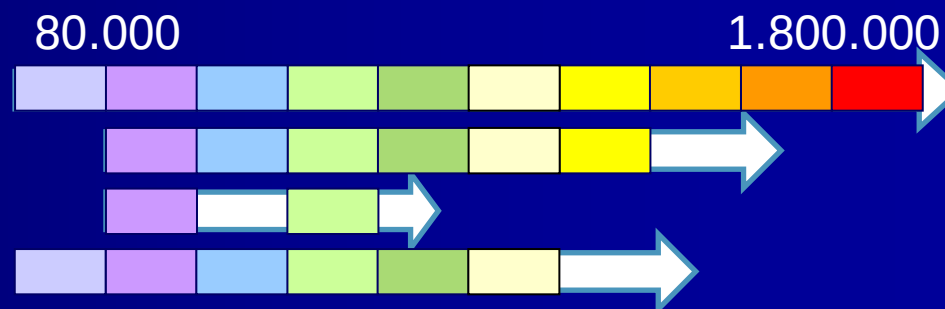
Routine laboratories

Matrix

raw milk
heat treated milk
natural cell
external cell
bulk/single cow milk

Range

80.000-1.800.000 cell/ml
150.000-1.300.000 cell/ml
200.000 – 500.000 cell/ml
80.000 - 800.000 cell/ml



Number of levels and samples

Different characterization processes

Reference
method

Routine
methods

Proficiency
Test



Assigned
value



International surveys !!!

Reference material producers

Routine laboratories

From these results.....

The PG Ref Sys SCC is outlining documents:

- To describe the requirements of a RMs for SCC
- Instruction to prepare the Rms for SCC

International surveys !!!

Reference material producers

Routine laboratories



206 labs

225 Instruments

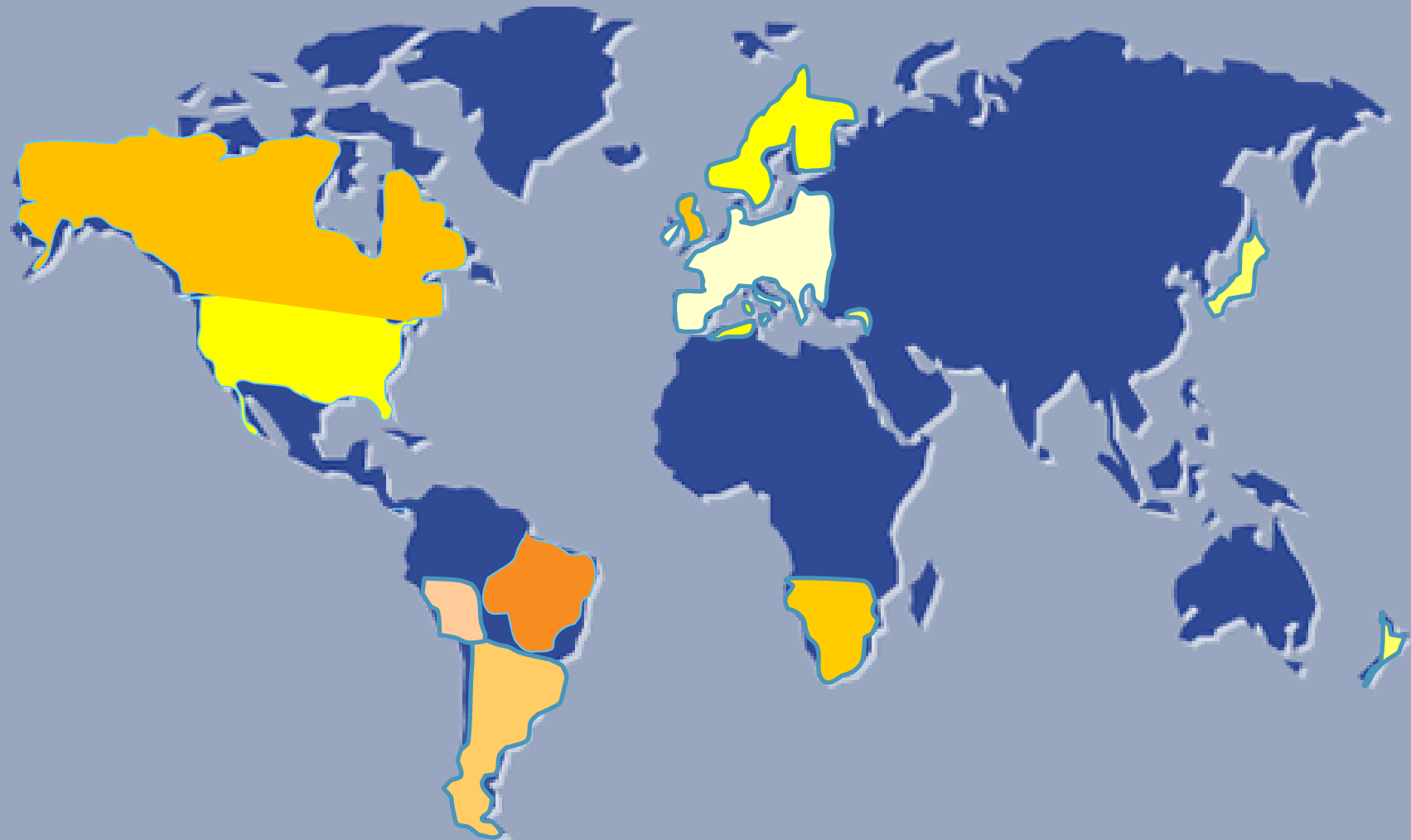
36 Countries

5 Continents

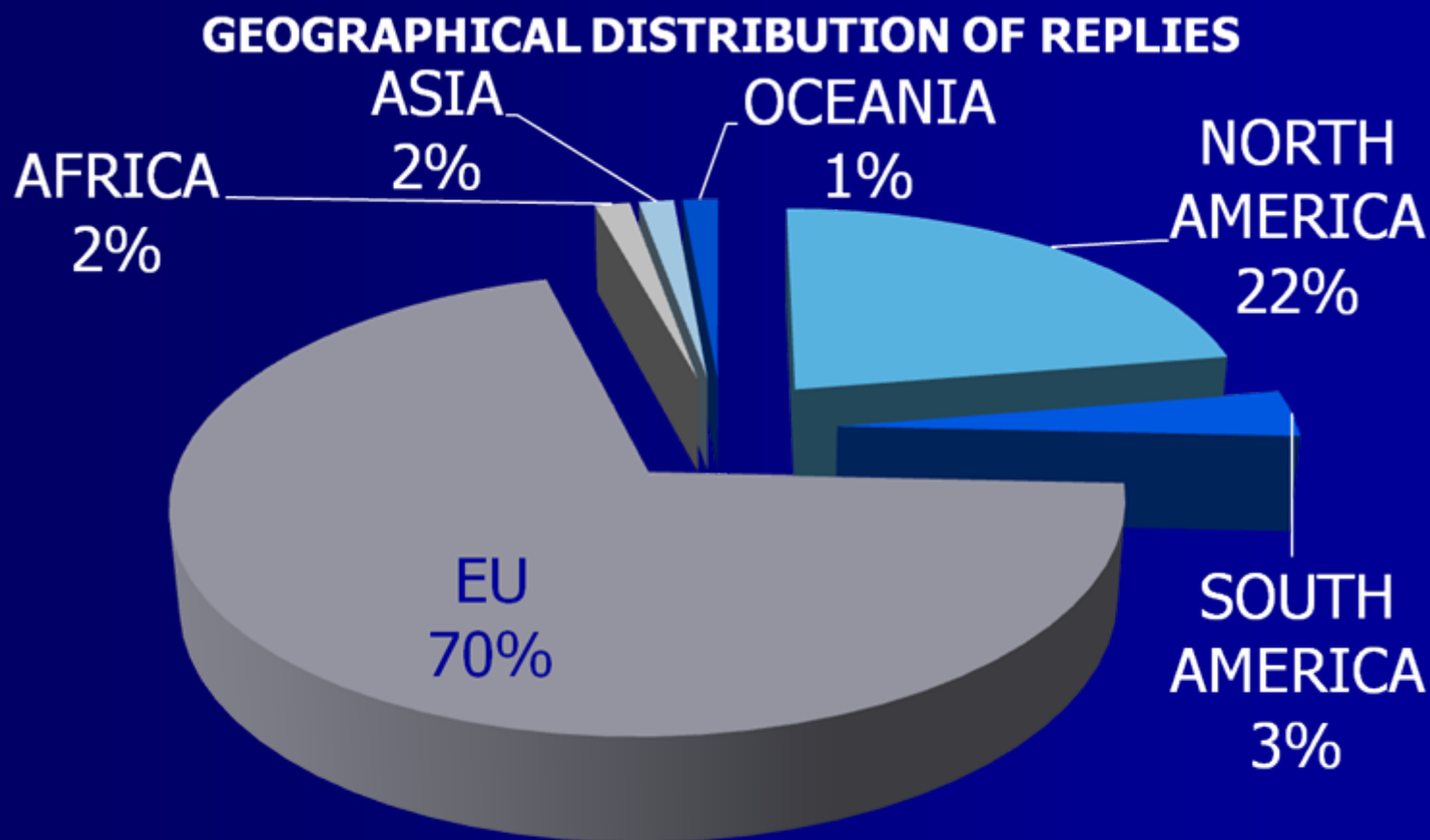
International surveys !!!

Reference material producers

Routine laboratories



Survey for Routine Laboratories



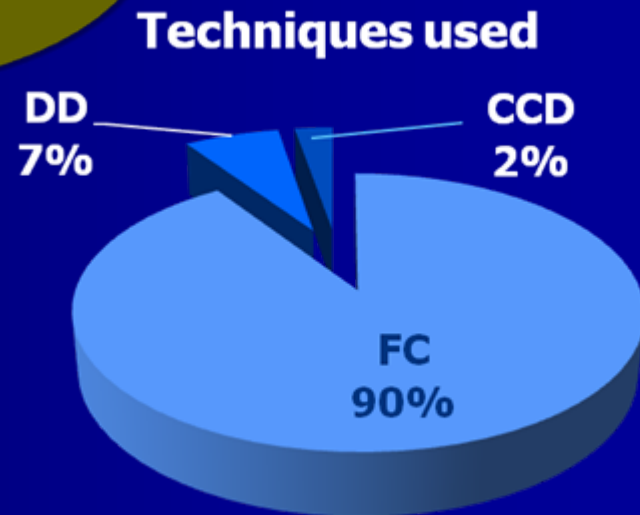
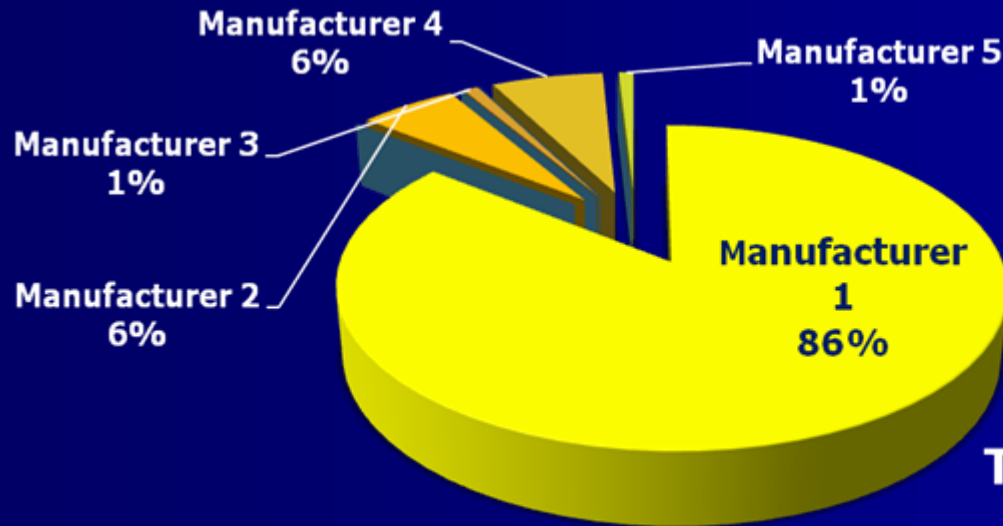
International surveys !!!

Reference material producers

Routine laboratories

1. Please, list the different types of instruments used for SCC routine testing in your laboratory
2. Do you calibrate the routine method?
3. What kind of reference material is used for calibration purposes?
4. What type of cells are used in the reference material?
5. Is the reference material prepared in your laboratory or is it provided by a RMs producer?
6. Calibration set and frequency of calibration?
7. What are the tolerances used for eventual adjustment?
8. Do you participate in interlaboratory proficiency studies ?

Technology used



DD= Displaying on Disk
CCD = Charge Couple Device
FC= Flow Cell

Reference Materials used

Is the reference material prepared in your laboratory or is it provided by a RMs producer

21 Providers ...in the first survey only 13



CH-CZ-3DE-DK-ES-FR-IR-IT-LV-
NL-PL-2SI

15 (11)



AR-2CN-USA

4 (2)



JAPAN

1 (X)

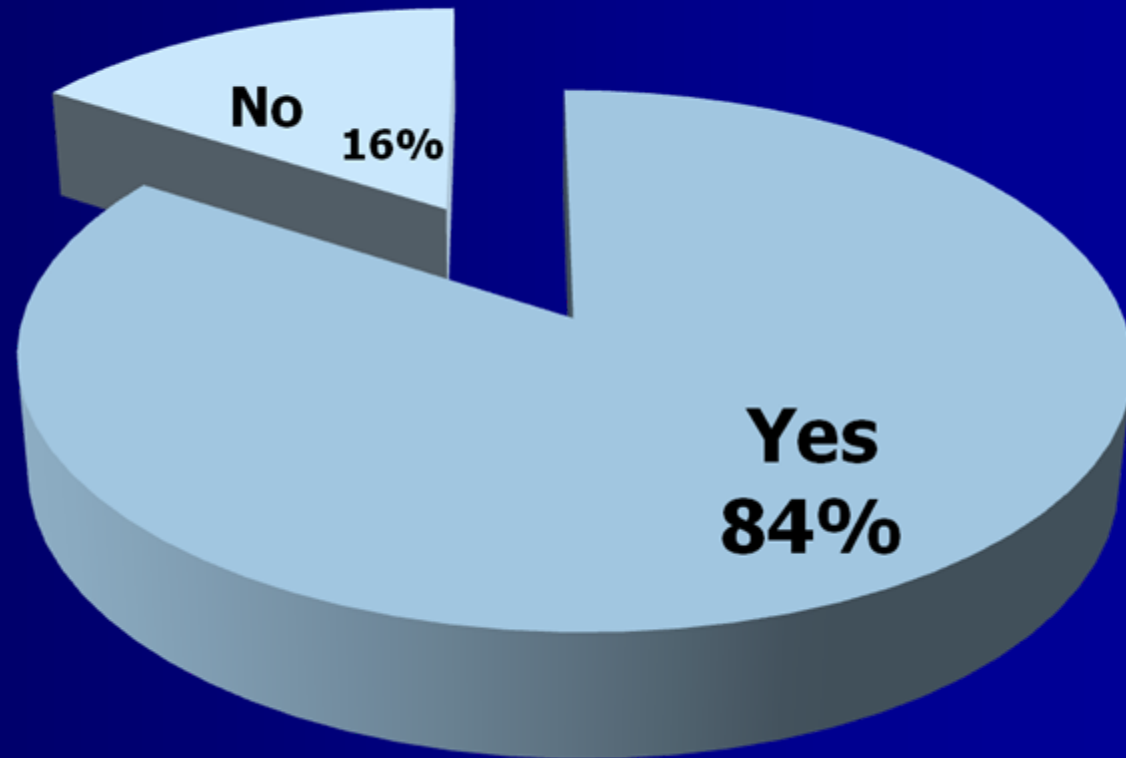


NZ

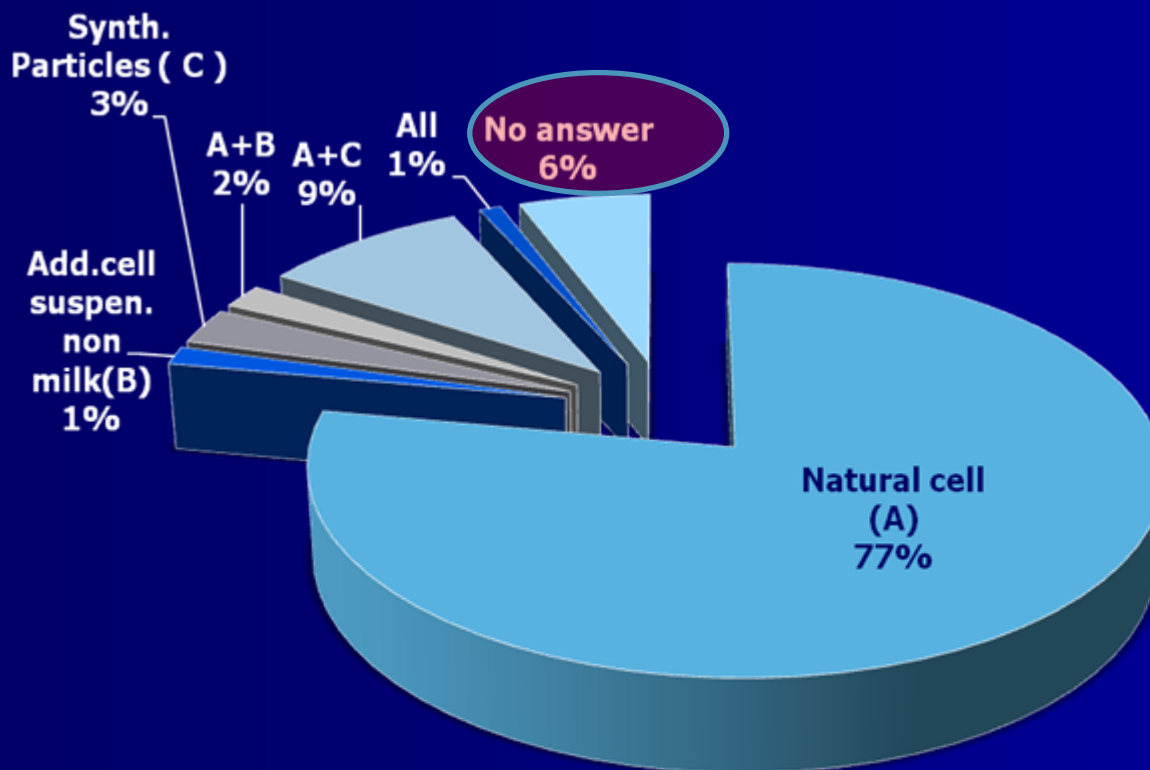
1 (X)

Calibration Procedures

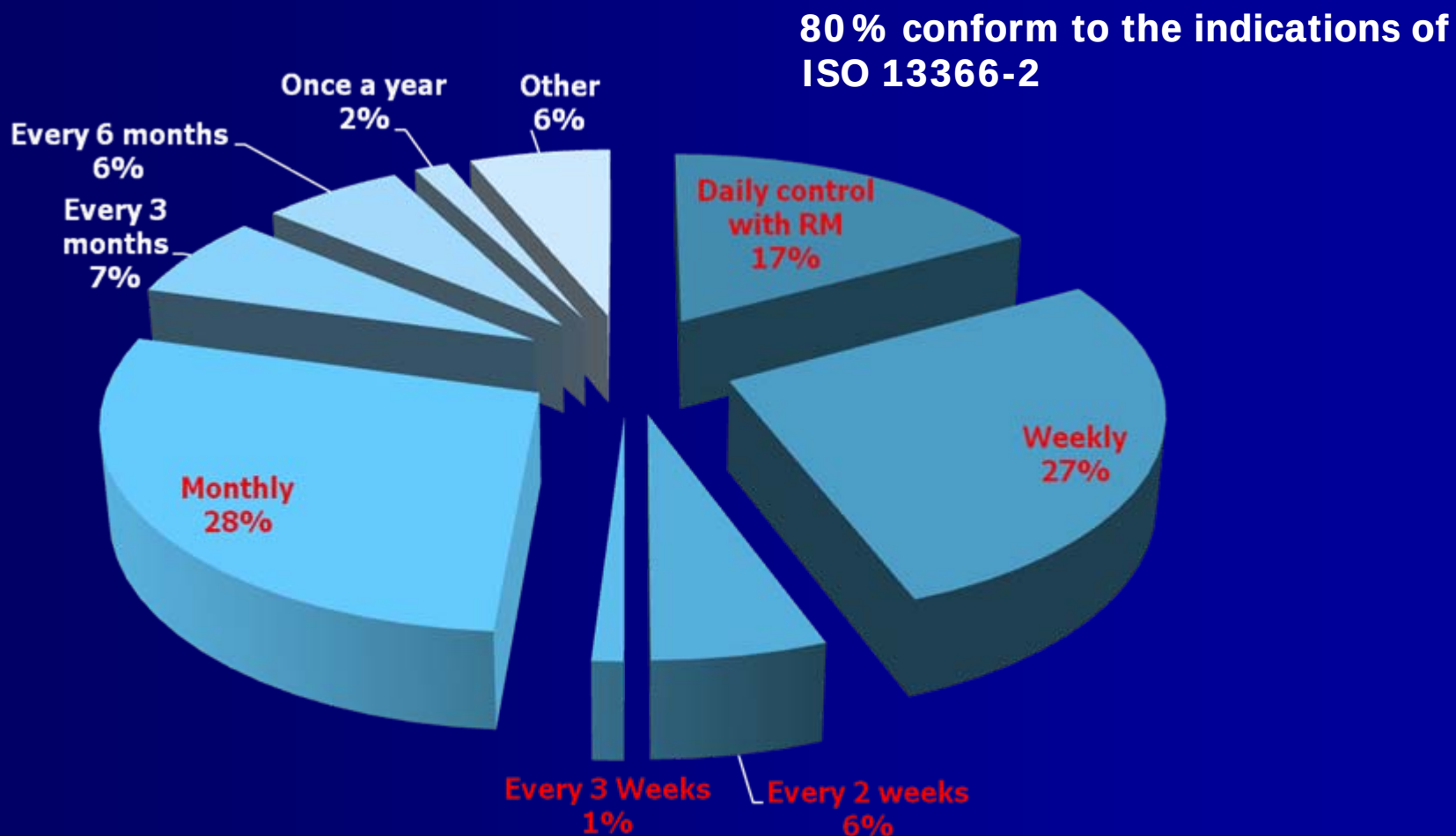
Do you calibrate the routine method ?



What kind of reference material is used for calibration purposes?



Frequency of calibration?



What are the tolerances used for eventual adjustment?

38 % of Answers of Slope of regression

answers received
38%

no answer
62%

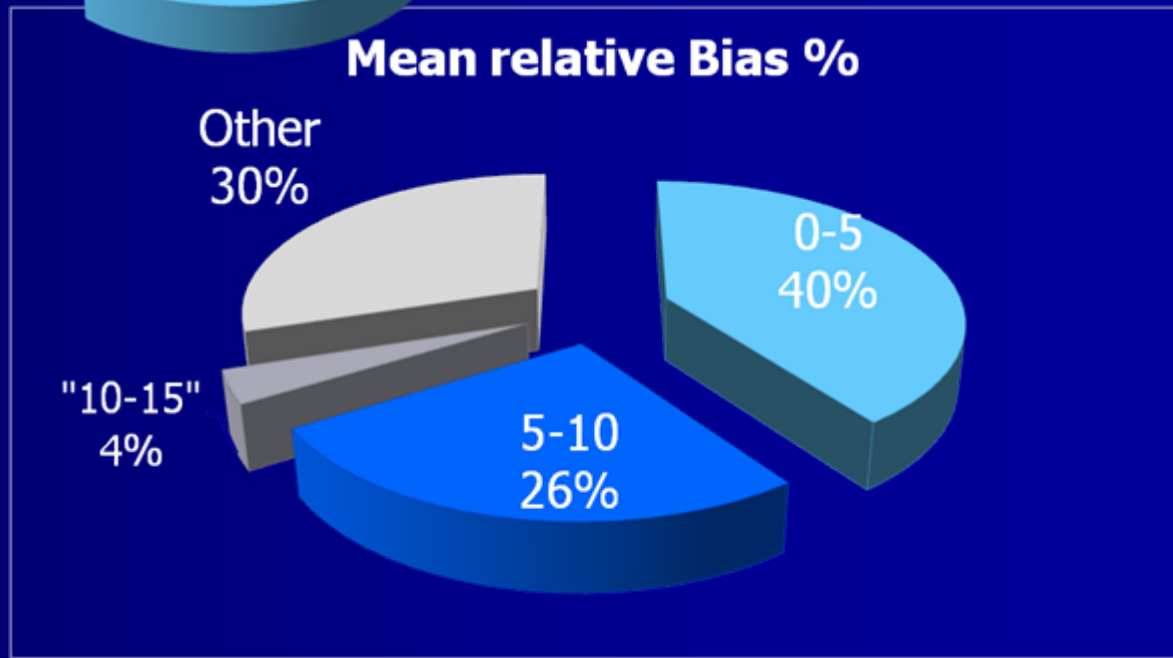
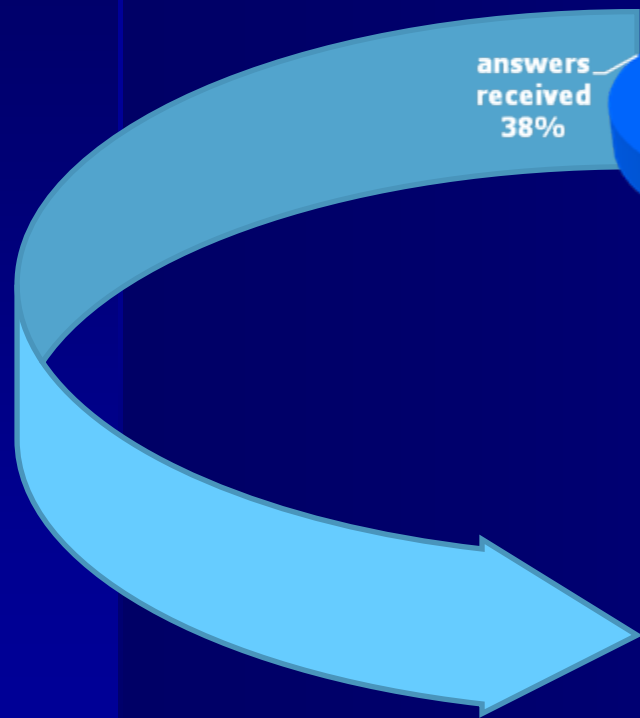
Mean relative Bias %

Other
30%

"10-15"
4%

5-10
26%

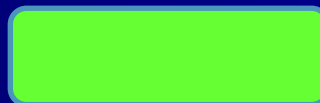
0-5
40%



Do you participate in interlaboratory proficiency studies ?

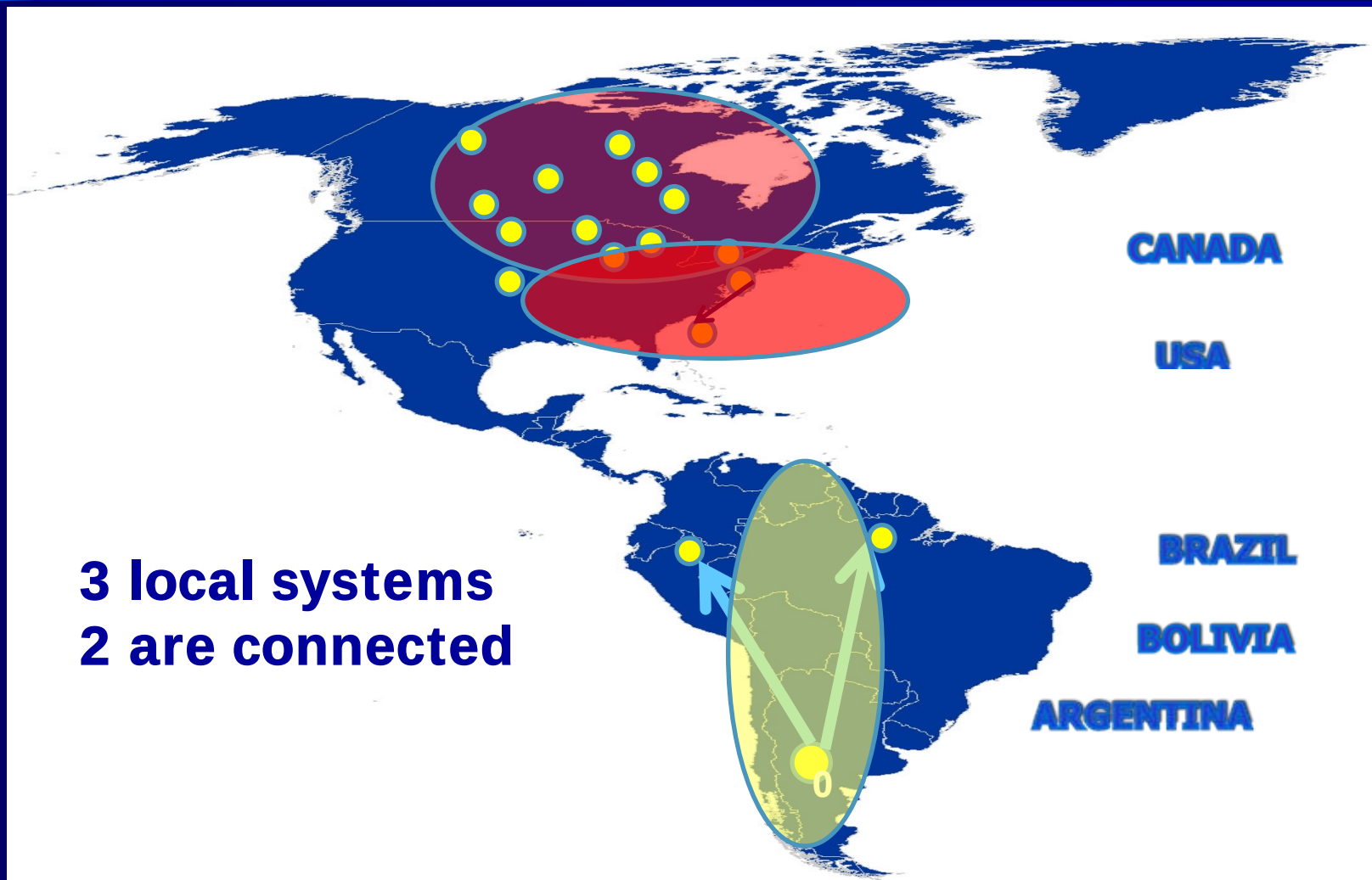


National PT



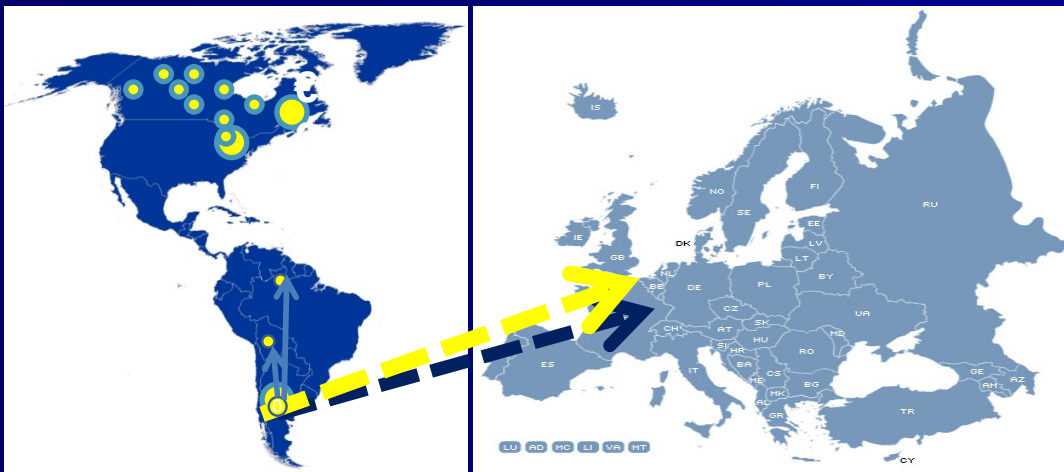
International PT

AMERICA



AMERICA

1 of the 3 local systems is connected with Europe



ASIA

ICAR

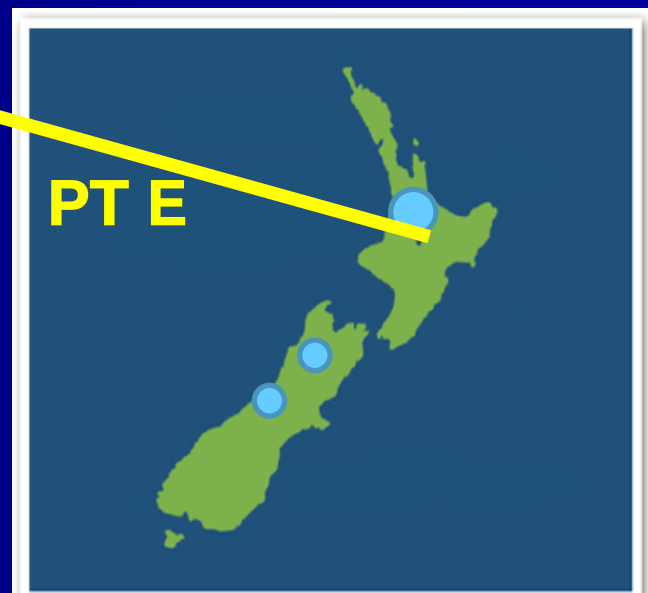
IL

2 local systems are connected with 3 european systems



OCEANIA

1 local system is connected with Europe



AFRICA

2 local systems are connected with Europe
via PT and RM



RME1



PT E



ICAR

1

NL

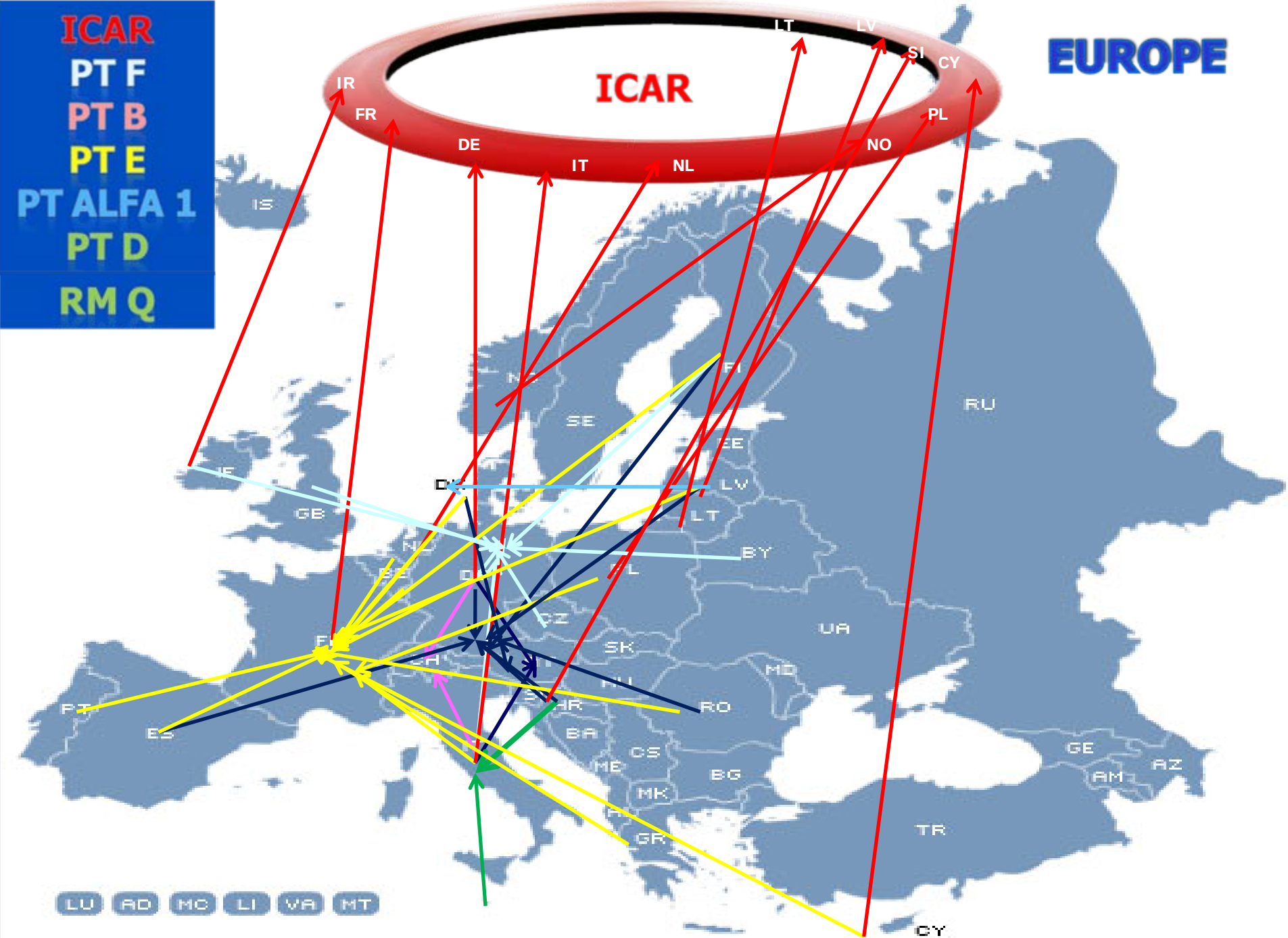
IT

IT

IT

RM Q

EUROPE





[illegible]

ICAR 2012 Cork (IR)

[illegible]

INTERCONNECTIONS

➤ **206 labs 484 connections**

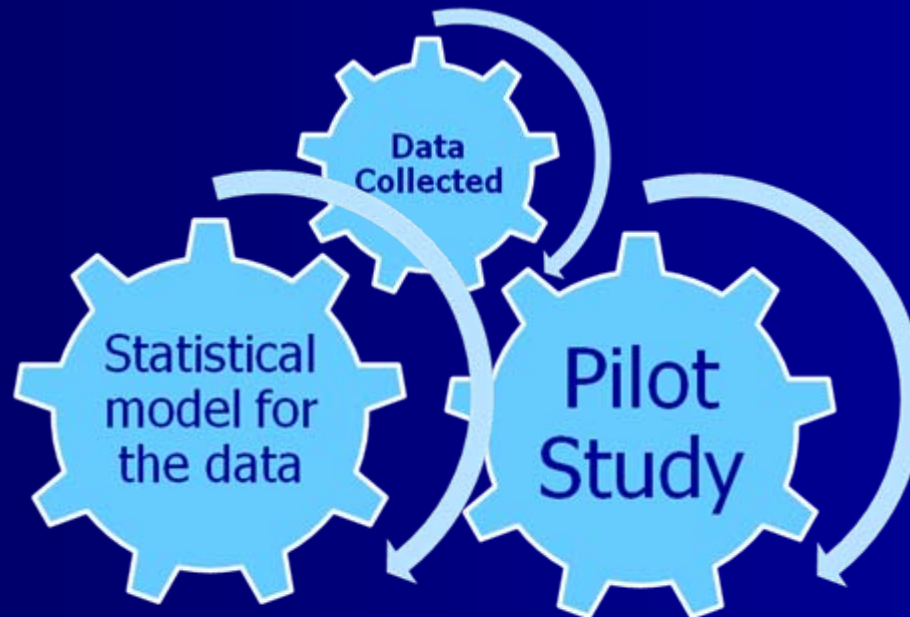
➤ **21 labs from 14 countries is worthwhile to contact because use more than one RMs or participate in more than one PT scheme !!!**

7 are ICAR LABS

➤ **4 countries seems to be isolated from the international scenario:**

Participate only to one system

SUM UP



To evaluate the functioning and robustness

Global Reference System

Criteria for competence of contributing labs

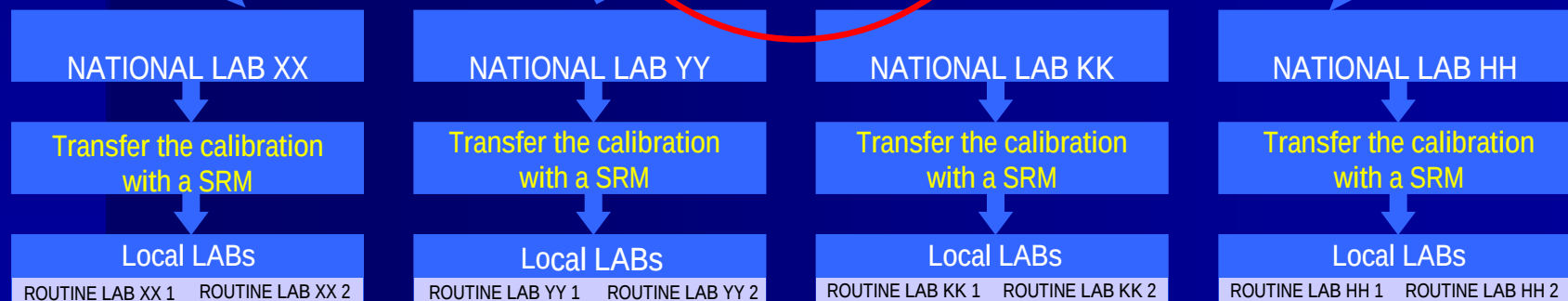
Criteria for competence of contributing labs

COORDINATOR



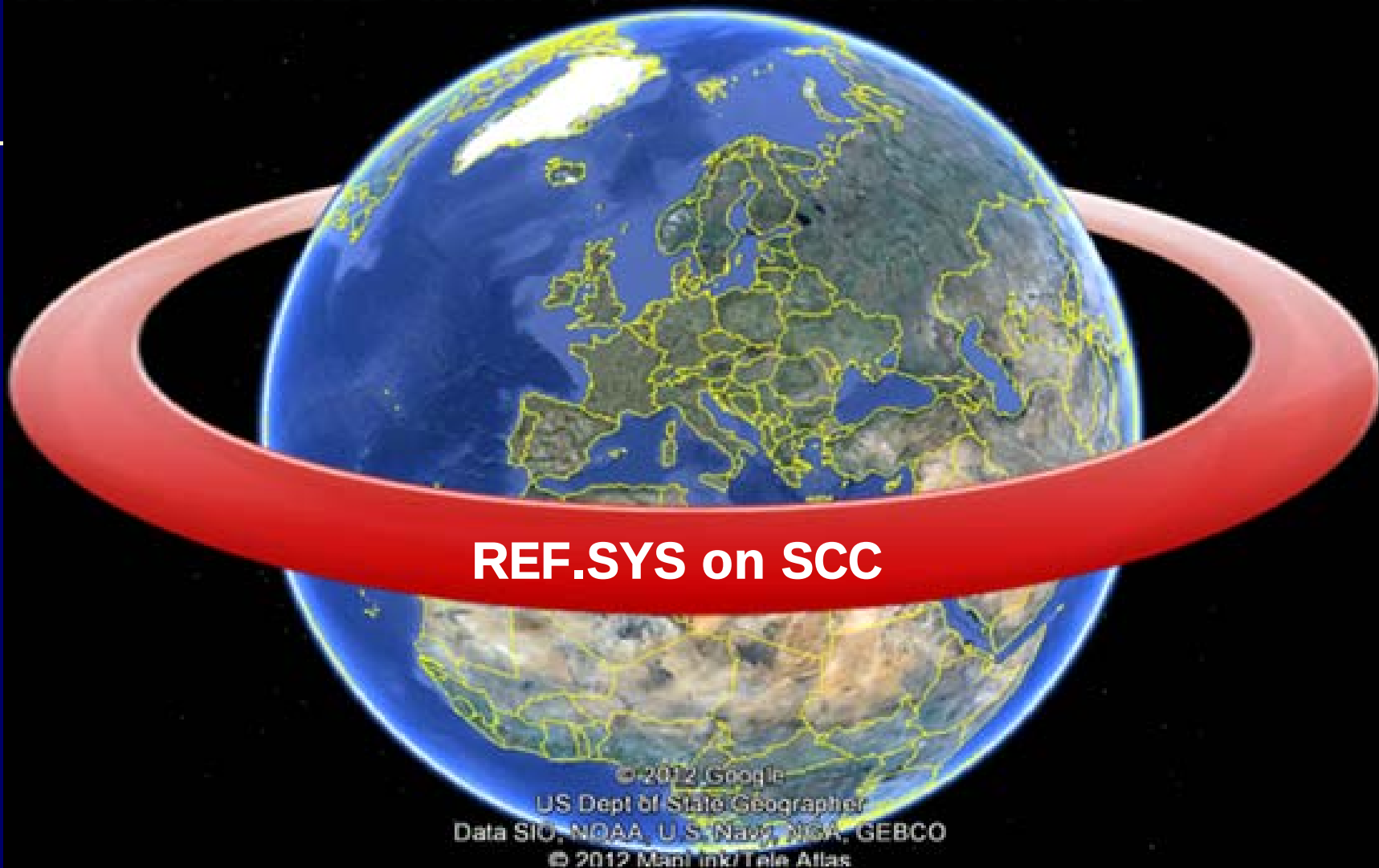
Data processing

Assigned value



BOTTOM UP APPROACH!

GLOBAL INTERCONNECTIONS PT SCHEMES AND RM_s TRACEABILITY



REF.SYS on SCC

For further reading...

- www.fil-idf.org (working area)
- Newsletters
- Accred Qual Assur (2011) 16:415–420
DOI 10.1007/s00769-011-0797-7
- IDF Bulletin 427/2008

Thank you for your attention !

on behalf of the
IDF/ICAR Project Group

4 Continents
19 Countries
28 Members

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