THE GLOBAL STANDARD FOR LIVESTOCK DATA

Network. Guidelines. Certification.

ICAR's proficiency testing scheme (PT) A service to connect the world's milk laboratories

Silvia Orlandini & Cesare Mosconi
ICAR staff

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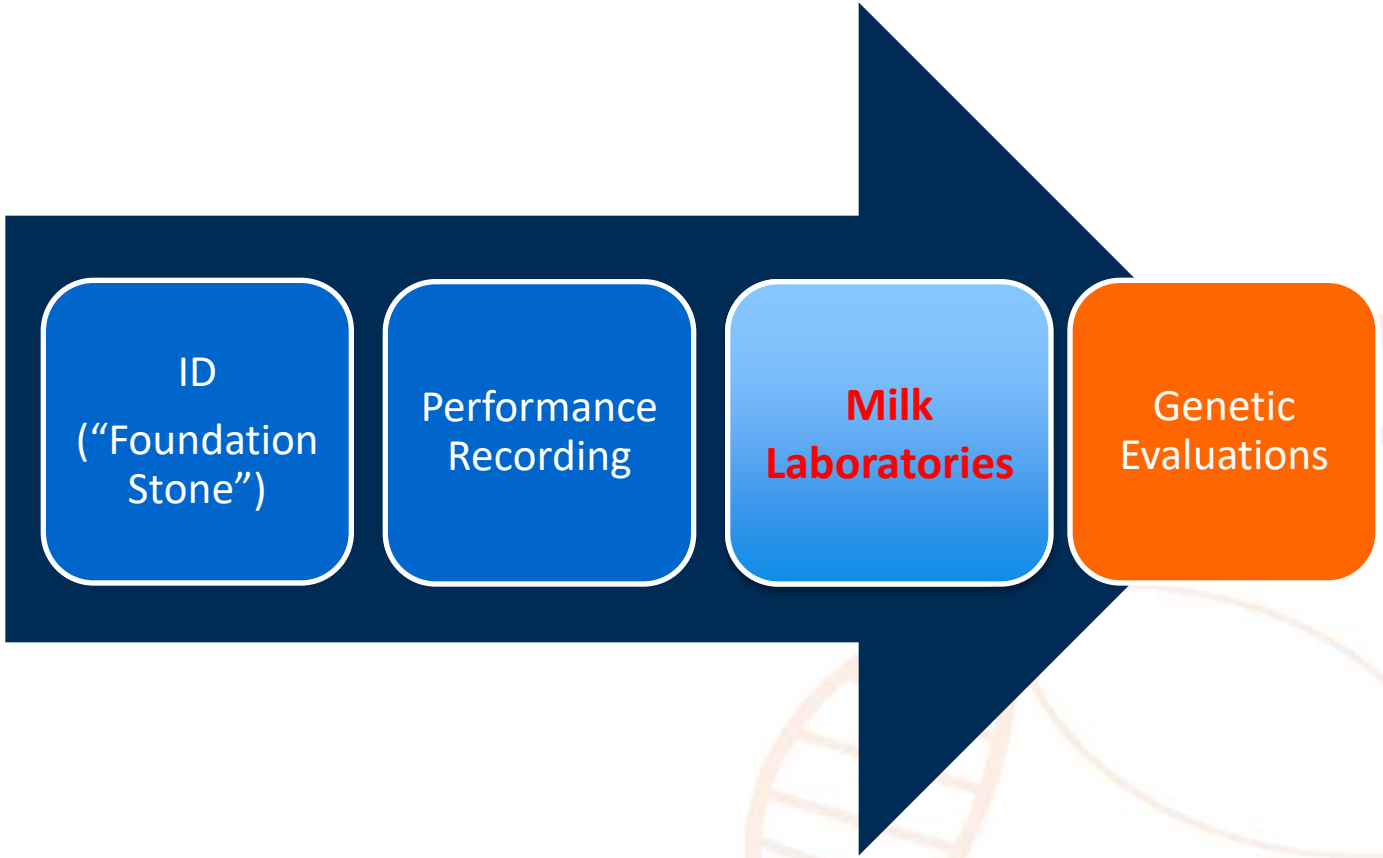
Content

- ICAR goals
- Introduction of a Proficiency test
- Introduction of an ICAR PT
- Analysis of ICAR PT 2016

ICAR's Building Blocks



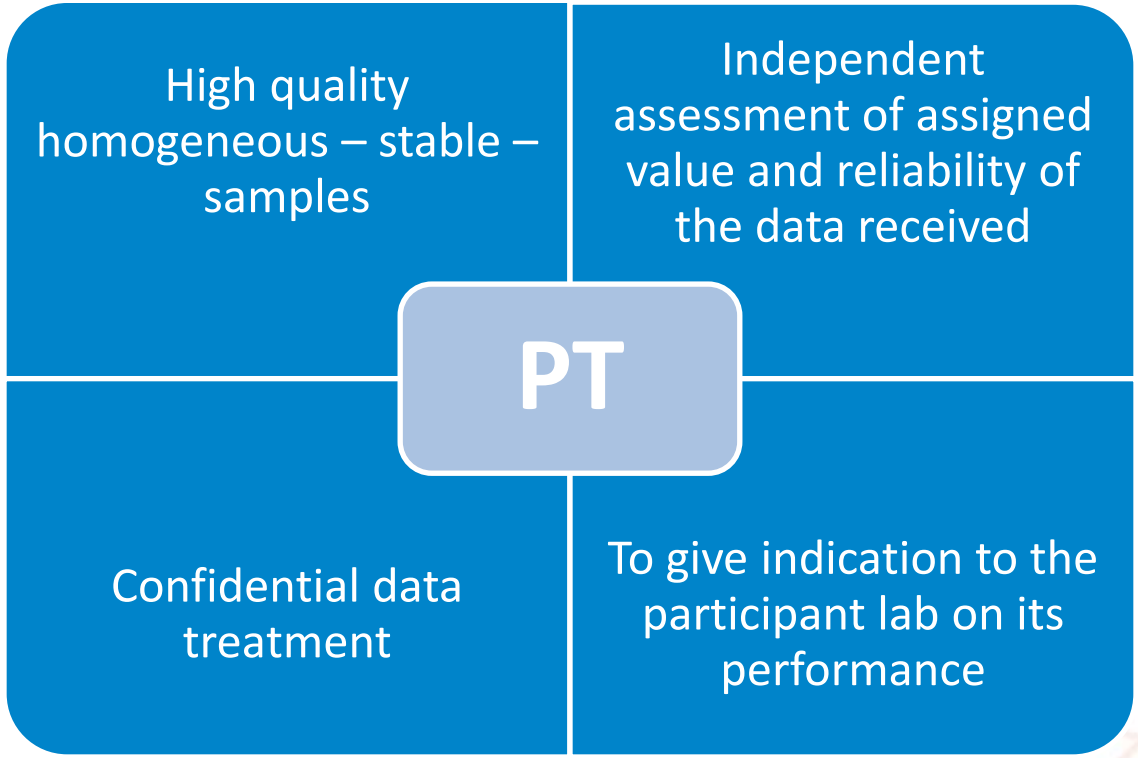
ICAR GOALS

To promote and to maintain in the ICAR dairy laboratories the highest possible standard of accuracy and precision to built confidence in the comparability of measurements

ICAR Proficiency testing scheme is one of the most valuable tool !

What is a proficiency testing scheme.....

Proficiency testing (PT)
is defined as the evaluation of participant performance against pre-established
criteria by means of
interlaboratory comparisons.



When performed within the context of a quality assurance programme, a PT ISO 17043 is an **independent** means of assuring the quality of test and calibration results, as described in ISO/IEC 17025

What´s an ICAR PT

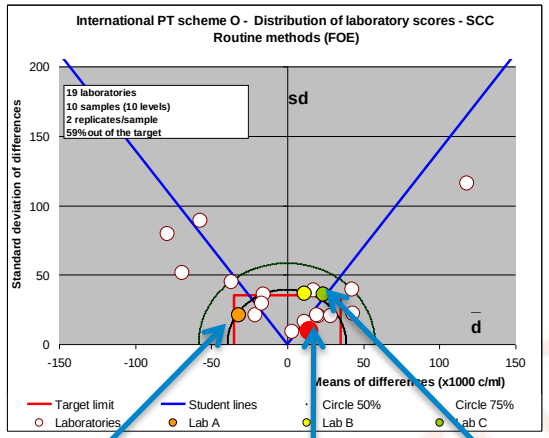
- ICAR PT provides schemes designed to facilitate the improvement of the quality of milk DHI analyses
- Participation provides information on technical issues and methodologies in the ICAR population
- Comprehensive INDIVIDUAL report for a positive feed back in the participant laboratory
- With the PTs, ICAR collects information on the QA procedures operating in the DHI labs and consider in the evaluation of **ICAR PT populations**

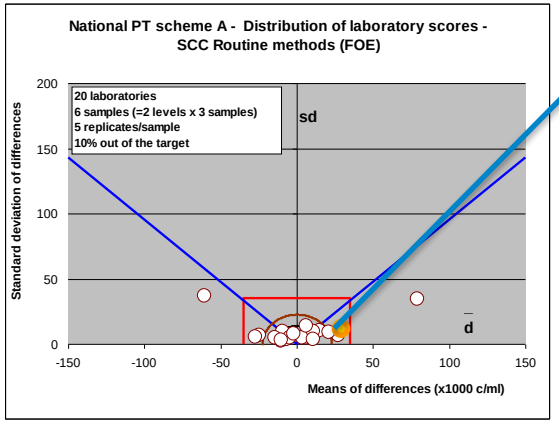
Why an ICAR PT

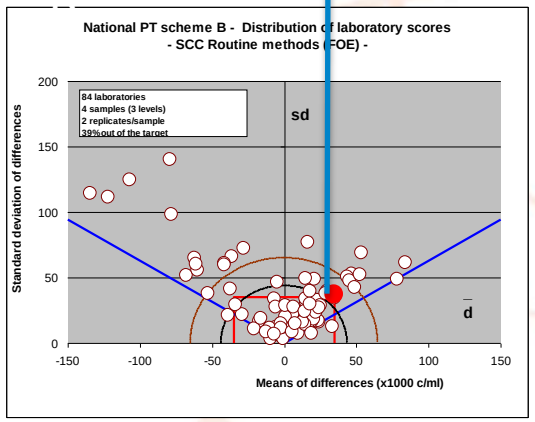
- To create a professional collaboration with the ICAR PT participants
- To calculate the precision among the ICAR laboratories for reference and routine methods
- To evaluate if the ICAR PT precision is fit for the the ICAR purposes and if is comparable with the precision specified in the ISO standard
- To highlight the laboratories that participate in the ICAR PT to be consistent with the ICAR Certificate of Quality
- To provide individual performance over the time

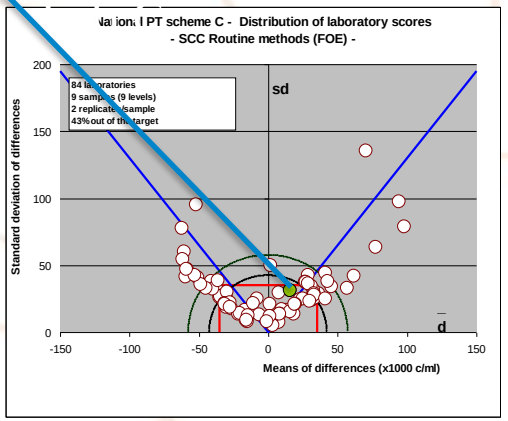
To connect the ICAR milk reference laboratories in a GLOBAL connection towards an international anchorage

With the ICAR PT **towards** International Anchorage









ICAR PT policy since 2016 (1)

- Coordinate the technical decision taken in the ICAR Milk Analyses Sub Committee MA SC and to apply them in the ICAR PT (e.g to extend the participation to the routine methods)
- Announce the ICAR PT
- Collect the participation forms
- Receive the ICAR PT results (owner of the data)
- Provide to the PT subcontractor the anonymous data for the statistical elaboration

ICAR PT policy since 2016 (2)

- Maintain direct contact with the ICAR laboratories
- To provide a customized individual report with the indication to improve own performance
- To maintain the ZS_{PT} and ZS_{FIX} control charts over the time
- Invoice the ICAR participants

•Actalia is the sub-contractor accreditated ISO 17043
  - Prepare the samples
  - Distribute the samples
  - Provide the statistical elaboration

Parameters offered

Reference chemical methods

- Fat
- Protein
- Lactose
- Urea
- Somatic cell (Ref+Routine)

Altenative methods

- Fat
- Protein
- Lactose
- Urea
- BHB (Beta-Hydroxybutyrate)
- Bacterial DNA (PCR)
- PAG (pregnancy associated glycoproteins)

New from December 2016

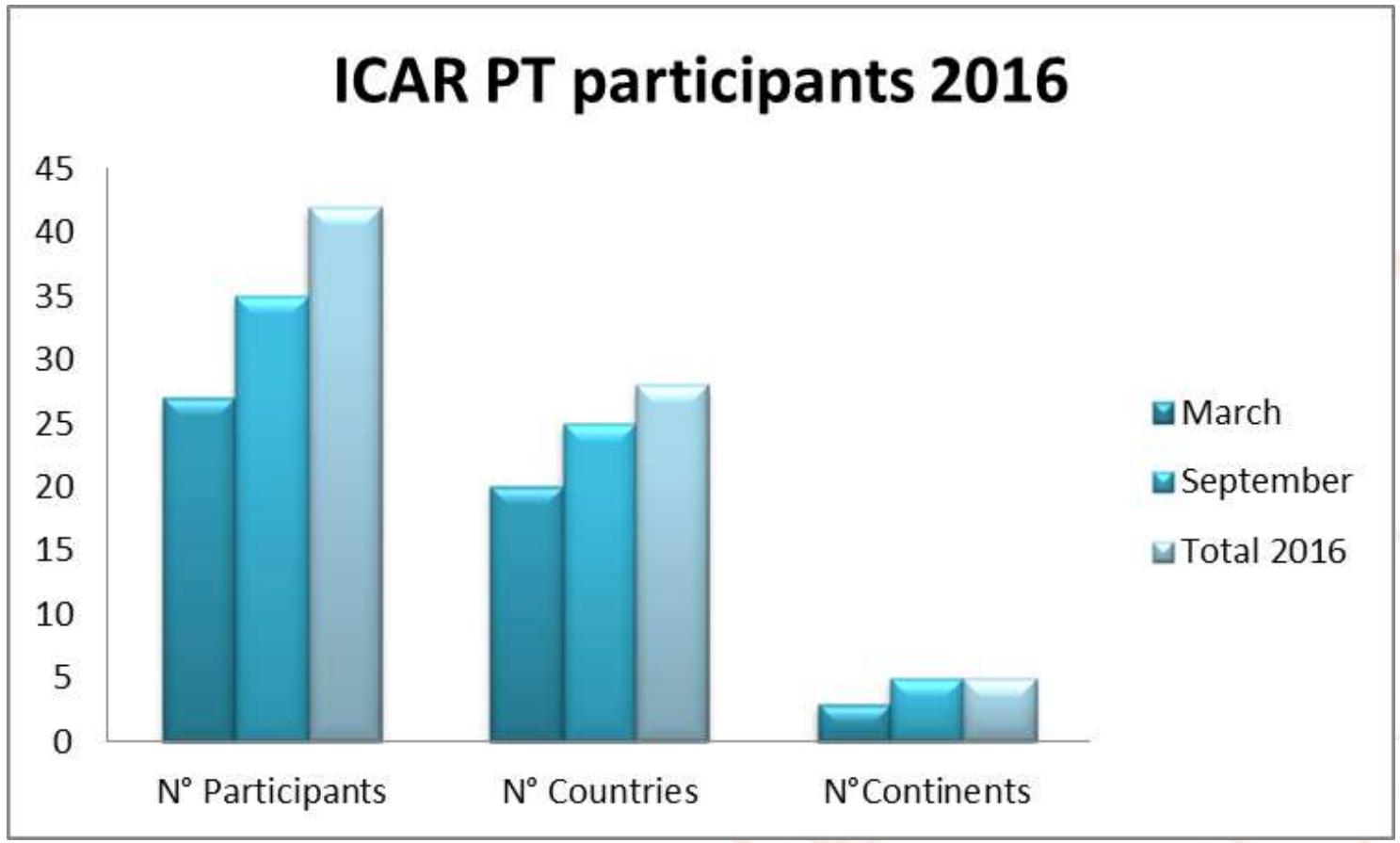
Participating countries (blue) in the ICAR PT 2016

42 Participants – 28 Countries- 5 Continents

ICAR has members in 59 countries

Evolution of ICAR PT participation in 2016

Total 42 Participants – 28 Countries- 5 Continents



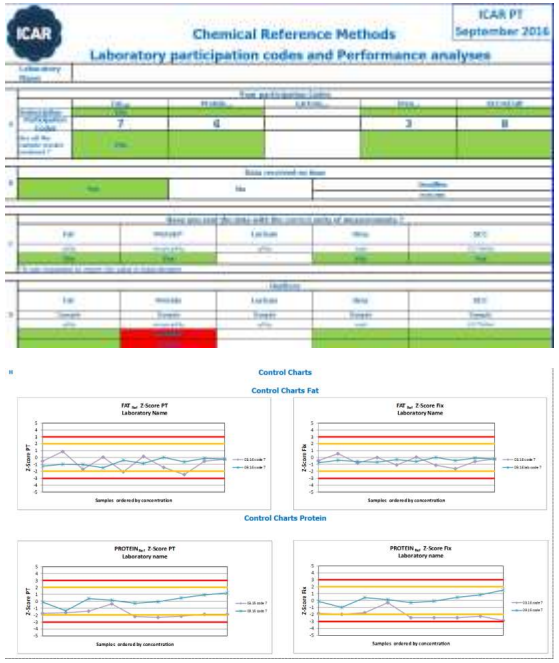
On 28 participant countries some did not participated (ref or routine methods) for the following parameters :

Number of countries did not send back data/information	
FAT	3
PROTEIN	3
LACTOSE	6
UREA	8
SCC	5

ICAR PT Reports

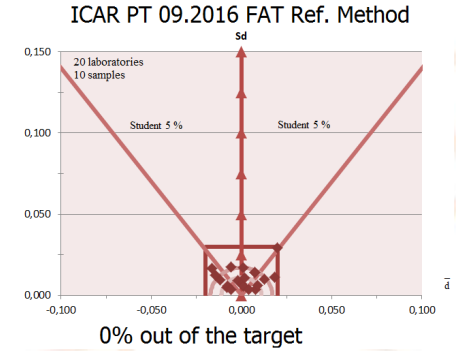
Participant view

- Individual performance



ICAR and its members view

- Global performance



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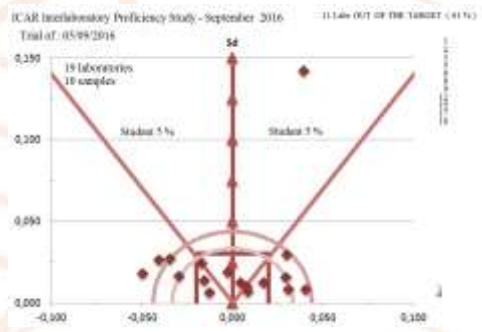


Participant view ICAR PT Reports (1)

Lab Name

P. codes

Time

Units

Outliers

ICAR

Chemical Reference Methods

Laboratory participation codes and Performance analyses

ICAR PT
September 2016

	Laboratory name	

Your participation Codes

		Fat$_{ref}$	Protein$_{ref}$	Lactose$_{ref}$	Urea$_{ref}$	SCCreflalt
A	Subscription	Yes				
	Participation Codes	7	6		3	8
	Are all the sample results received ?	Yes	Yes		Yes	Yes

B — Data received on time

Yes	No	Deadline
		19.03.2016

C — Have you sent the data with the correct units of measurements ?

Fat	Protein*	Lactose	Urea	SCC
g/100g	nitrogen g/100g	g/100g	mg/dl	SCC*1000/ml
Yes	Yes		Yes	Yes

*It was requested to report the value in total nitrogen

D — Outliers

Fat	Protein	Lactose	Urea	SCC
Sample	Sample	Sample	Sample	Sample
g/100g	nitrogen g/100g	g/100g	mg/dl	SCC*1000/ml
	Samples			
	4,7,10			

Participant view ICAR PT Reports (2)

Repeatability

Z-Score

Ranking

Repeatability

Your "r" performance					Limits				
Fat	Protein	Lactose	Urea	SCC	Fat	Protein	Lactose	Urea	SCC
g/100g	nitrogen g/100g	g/100g	mg/dl	SCC*1000/ml	g/100g	g/100g	g/100g	mg/dl	SCC*1000/ml
					ISO 1211 IDF 1D	ISO 8368 IDF 20	ISO 22662 IDF 198	ISO 14637 IDF 195	ISO 13366-2 IDF 148-2
									Level / r
					0,043	0,038	0,06	1,52	150 / 25
									300 / 42
									450 / 51
									750 / 64
									1500 / 126

If the repeatability is smaller than the limit the cell is in green if there is a sample with a "r" bigger than the limit the cell is in red. Please check table II in correspondence of the parameter and your lab code.

Z-Score

Your Z-Score PT				
Fat	Protein	Lactose	Urea	SCC
	Samples Z.1			

Your FIX Z-Score				
Fat	Protein	Lactose	Urea	SCC

If there is a sample with a "z-score" in the yellow or red area please check table VI and VII in correspondence of your lab code.

Interpretation Z-Score				
-2<Z-Score<2	-3<Z-Score<-2	2<Z-Score<3	Z-Score<-3	Z-Score>3
Good	Moderate	Moderate	Poor	Poor

Ranking of your lab

Mean difference and standard deviation of difference					Indicative Limits defined in the ICAR MA SC				
Fat	Protein	Lactose	Urea	SCC	Fat	Protein	Lactose	Urea	SCC
					g/100g	g/100g	g/100g	mg/dl	SCC*1000/ml
					d=0,02	d=0,025	d=0,10	d=2,5	d=10%
					sd=0,03	sd=0,020	sd=0,10	sd=1,5	sd=10%

If d and sd are in the limit (see Table 1 and Figure 1) the cells are in green

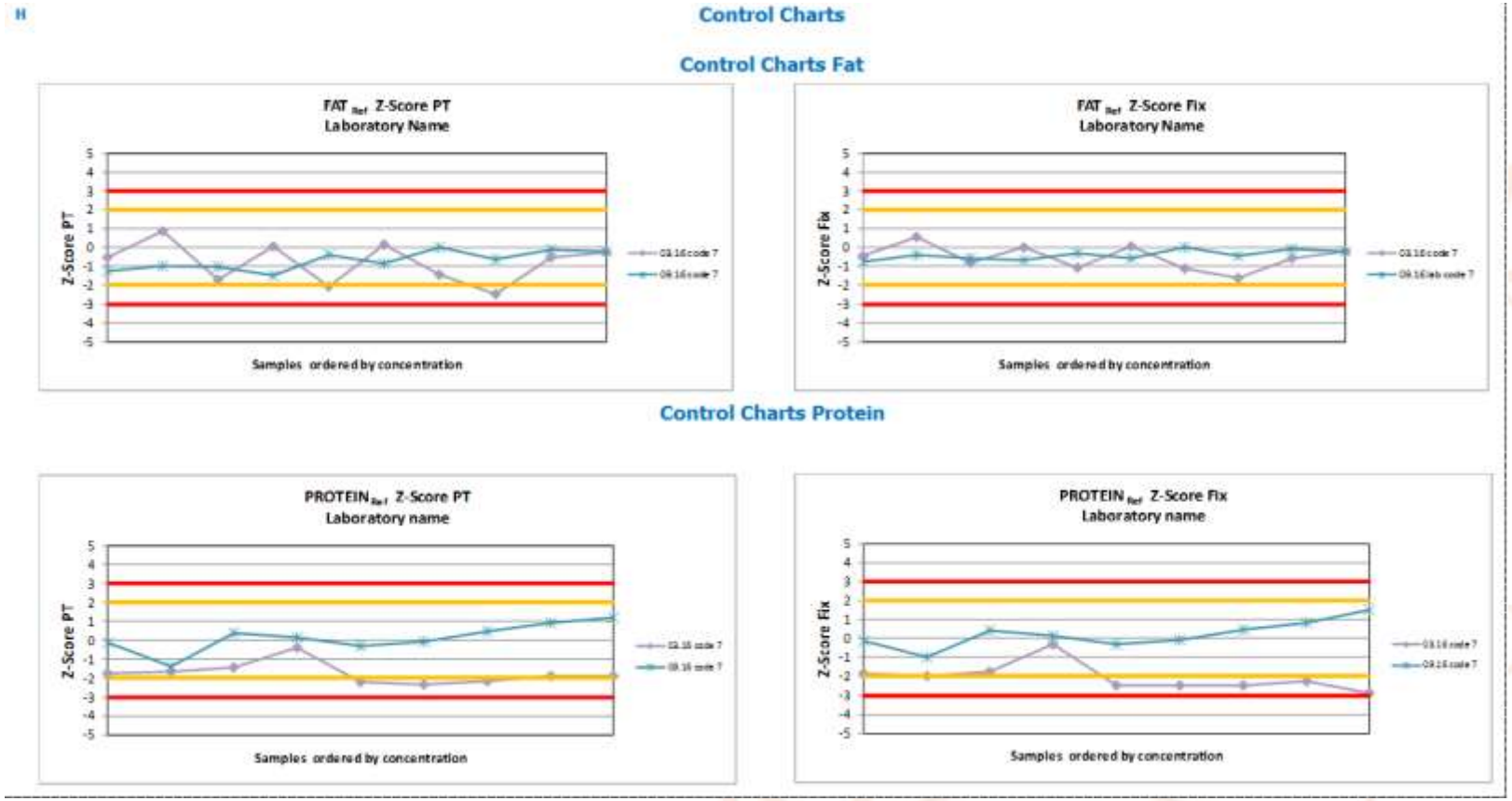
Note :	Limits are only indicative and so far do not constitute standard values; they indicate what is normally reachable by labs for their self evaluation

Legenda:

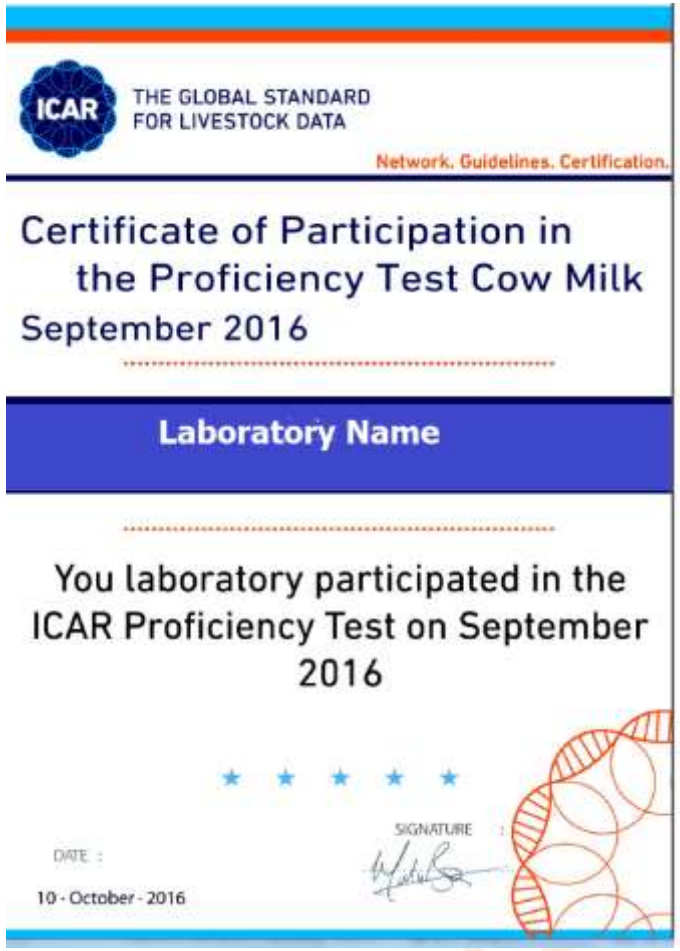
- positive performance for all the sample
- same sample showed a performance out of range or there are miss data
- The parameter was not analyzed

Participant view ICAR PT Reports (3)

Control Charts



Certificate of Participation



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Certificate of Participation in
the Proficiency Test Cow Milk
September 2016

Laboratory Name

You laboratory participated in the ICAR Proficiency Test on September 2016

★ ★ ★ ★ ★

SIGNATURE :

DATE :

10 - October - 2016

ICAR view Precision

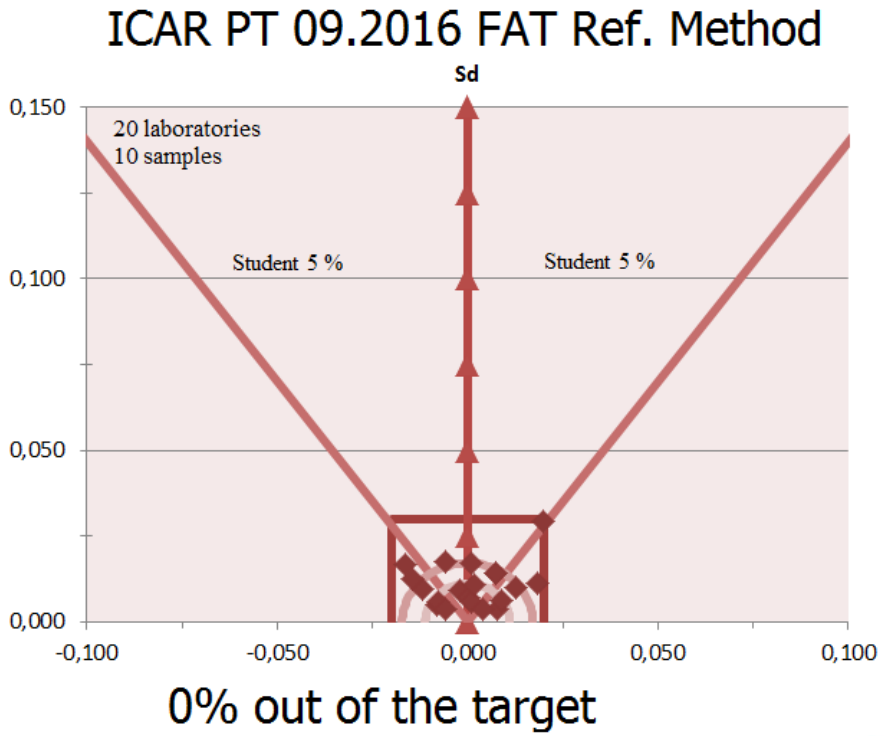
Reference methods

	FAT		PROTEIN		LACTOSE		UREA		SCC			
	sr	SR	sr	SR	sr	SR	sr	SR	sr	%	SR	%
March 2016	0,005	0,015	0,009	0,021	0,01	0,047	0,39	1,32	14.000	2%	76000	3%
September 2016	0,005	0,015	0,009	0,019	0,014	0,069	0,5	1,51	14.000	3%	86000	16%
ISO Values	0,015	0,020	0,014	0,018	0,022	0,047	0,543	1,810	18.000	10%	86000	16%

Alternative methods

	FAT_{IR}		$PROTEIN_{IR}$		$LACTOSE_{IR}$		$UREA_{IR}$	
	sr	SR	sr	SR	sr	SR	sr	SR
March 2016	0,009	0,029	0,006	0,037	0,007	0,099	0,88	3,28
September 2016	0,005	0,034	0,006	0,057	0,006	0,116	1,09	3,5
ISO Values	0,014	0,039	0,014	0,039	0,014	0,039	0,543	1,810

ICAR view results distribution (1)



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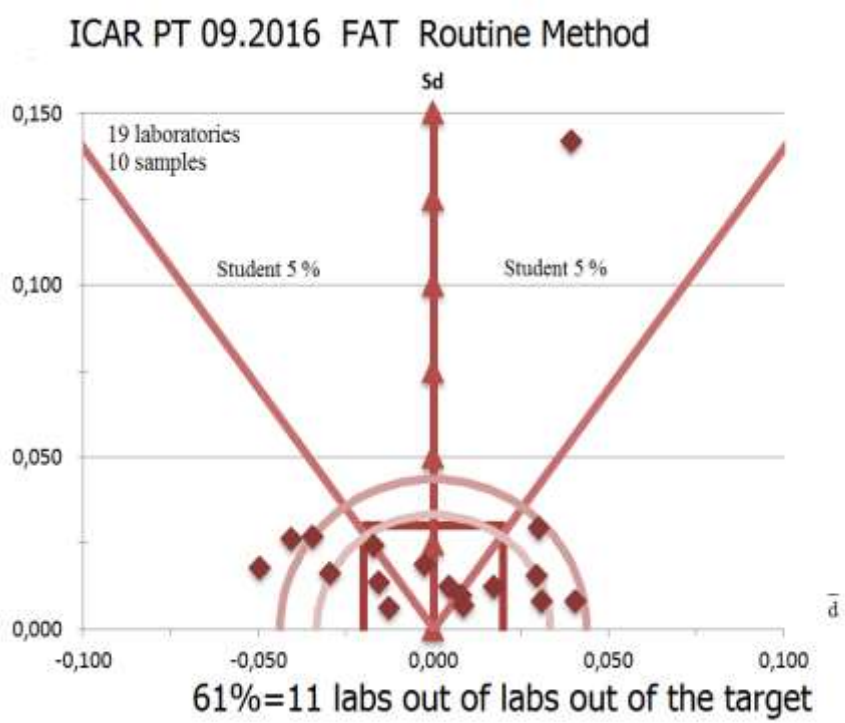
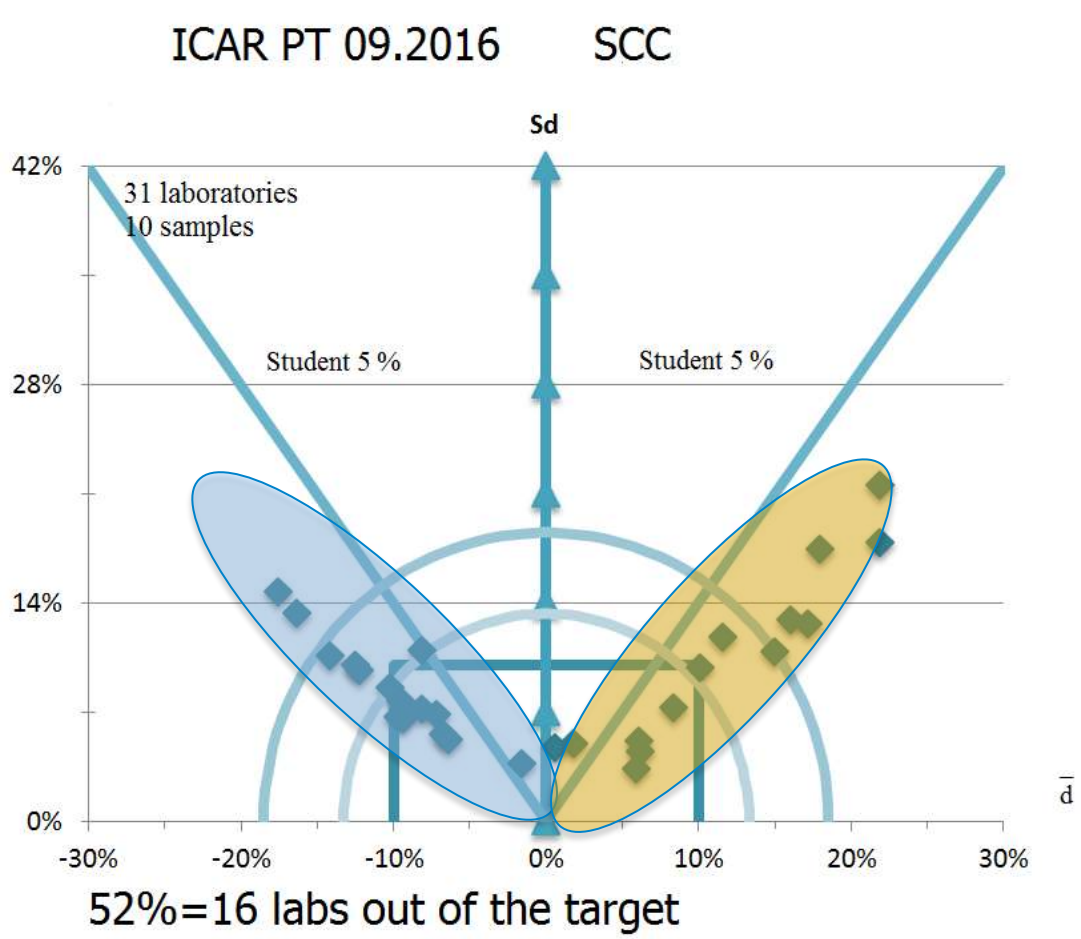
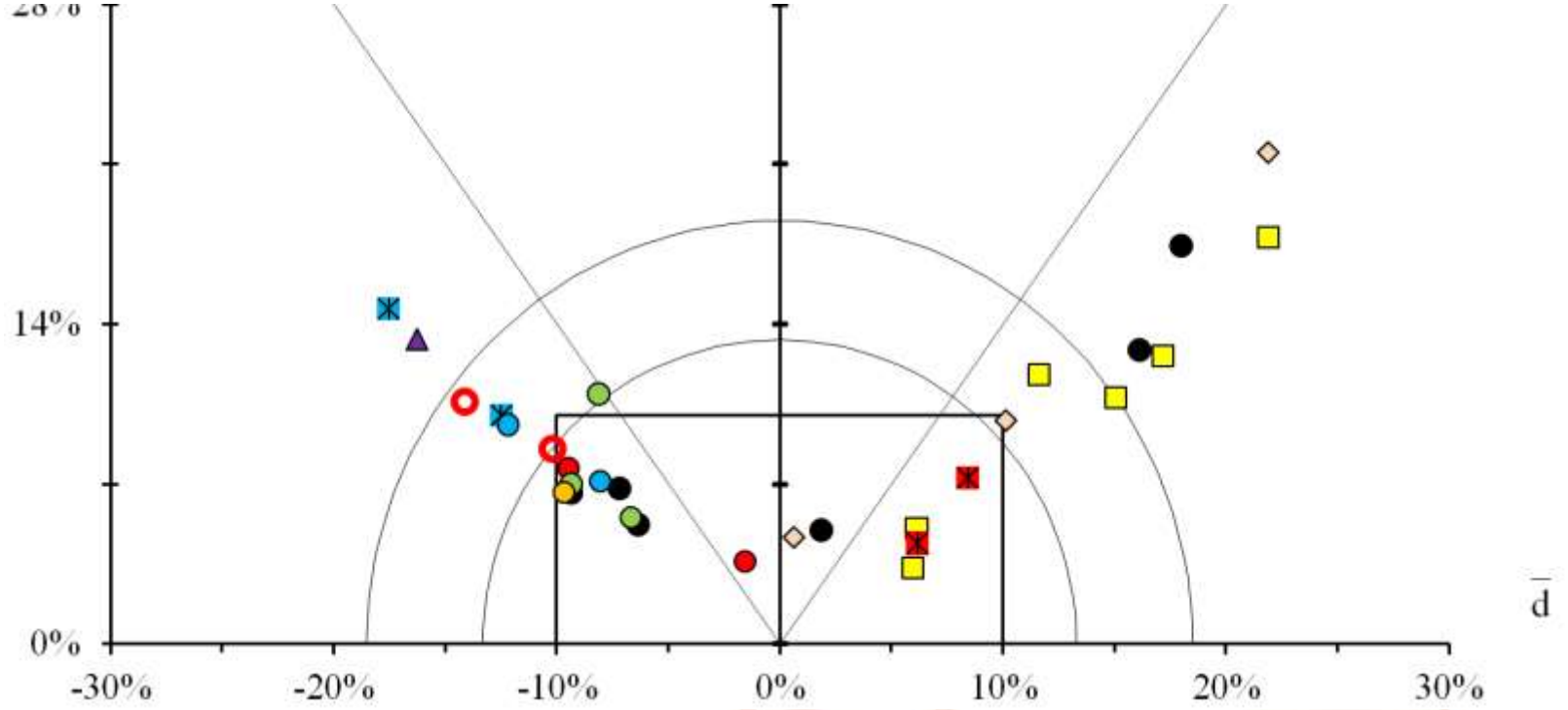


61%=11 labs out of labs out of the target

ICAR view results distribution (2)



ICAR view Ref. Material results distribution (3)

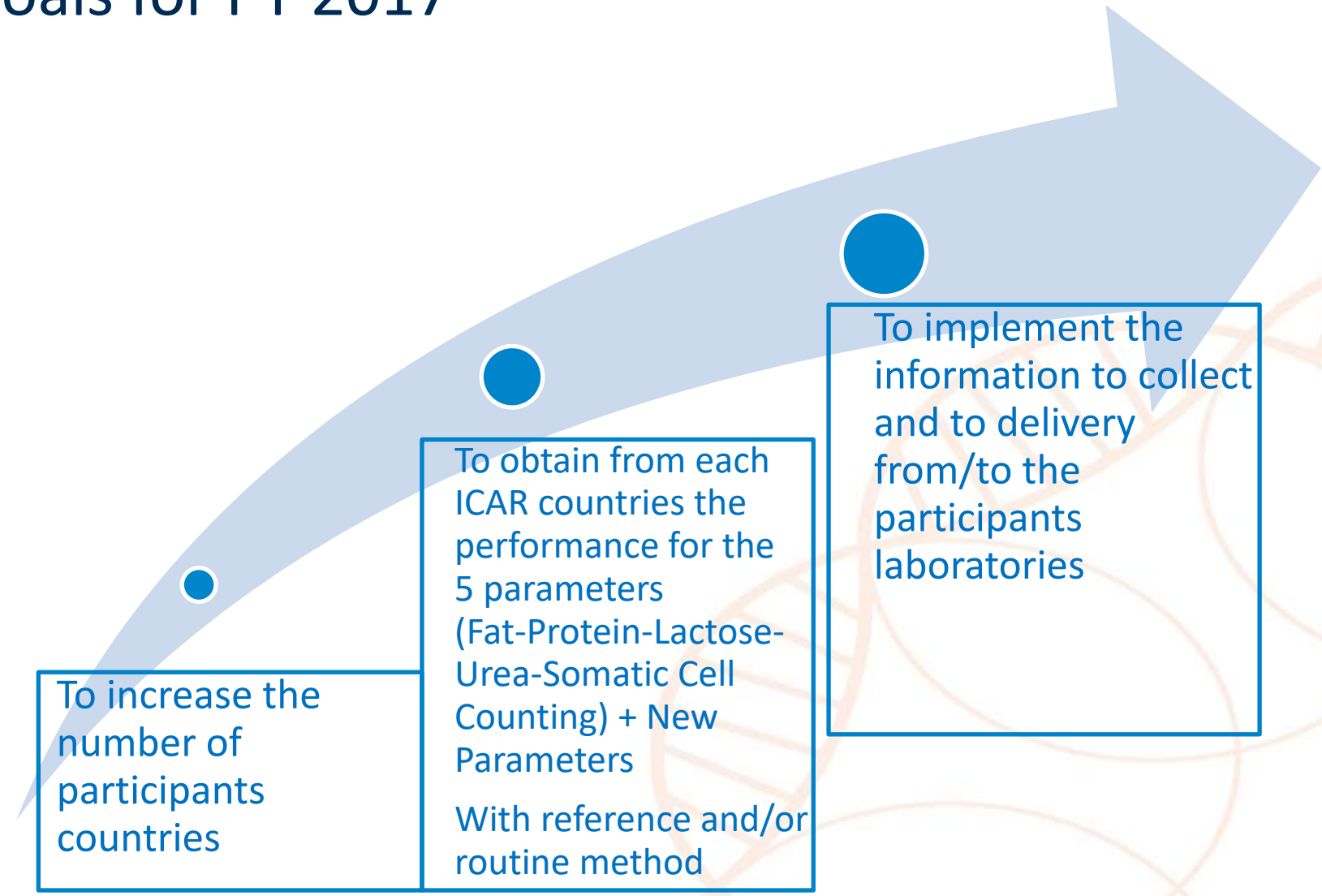


ICAR IDF collaboration

Project „Reference System on Somatic cell Counting“

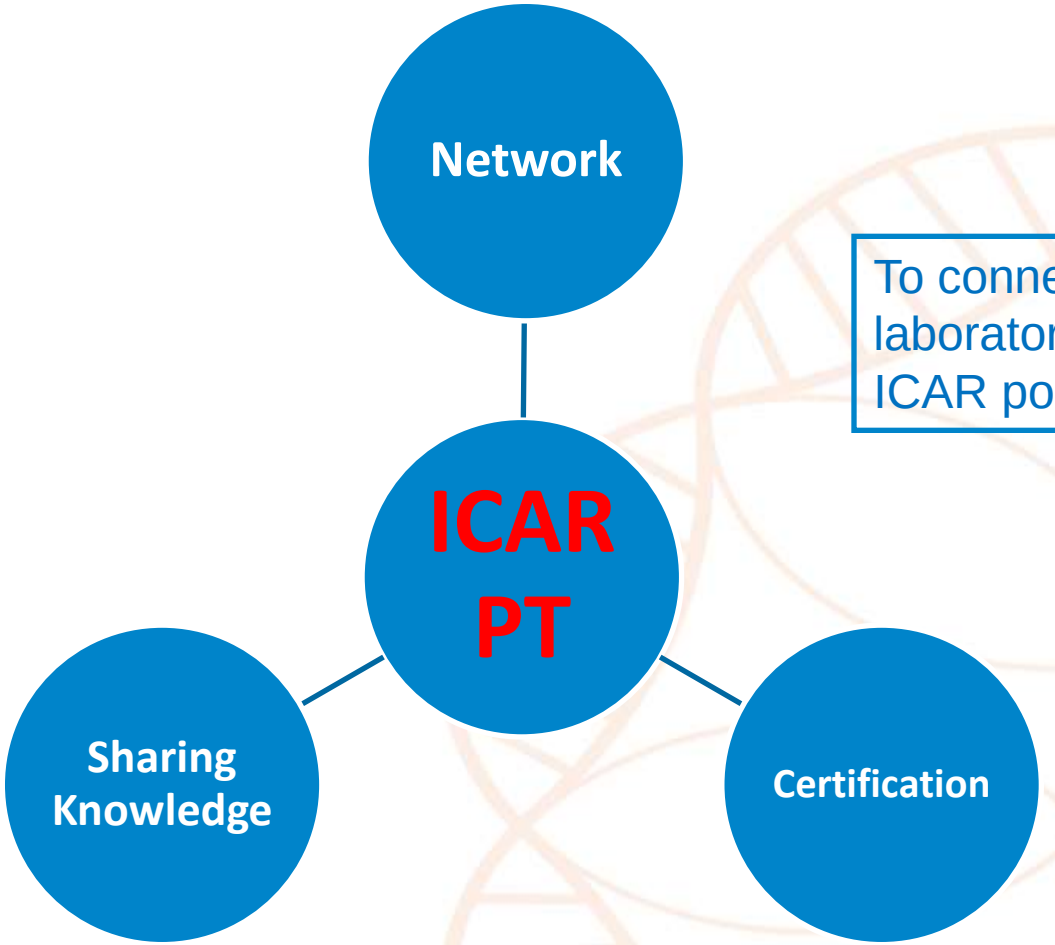
Invitation to attend to the conference
„Milk Analyses What‘s the next“
Thursday 27 October 8:30-10:30
Room: Osorno A y B

ICAR goals for PT 2017



Conclus

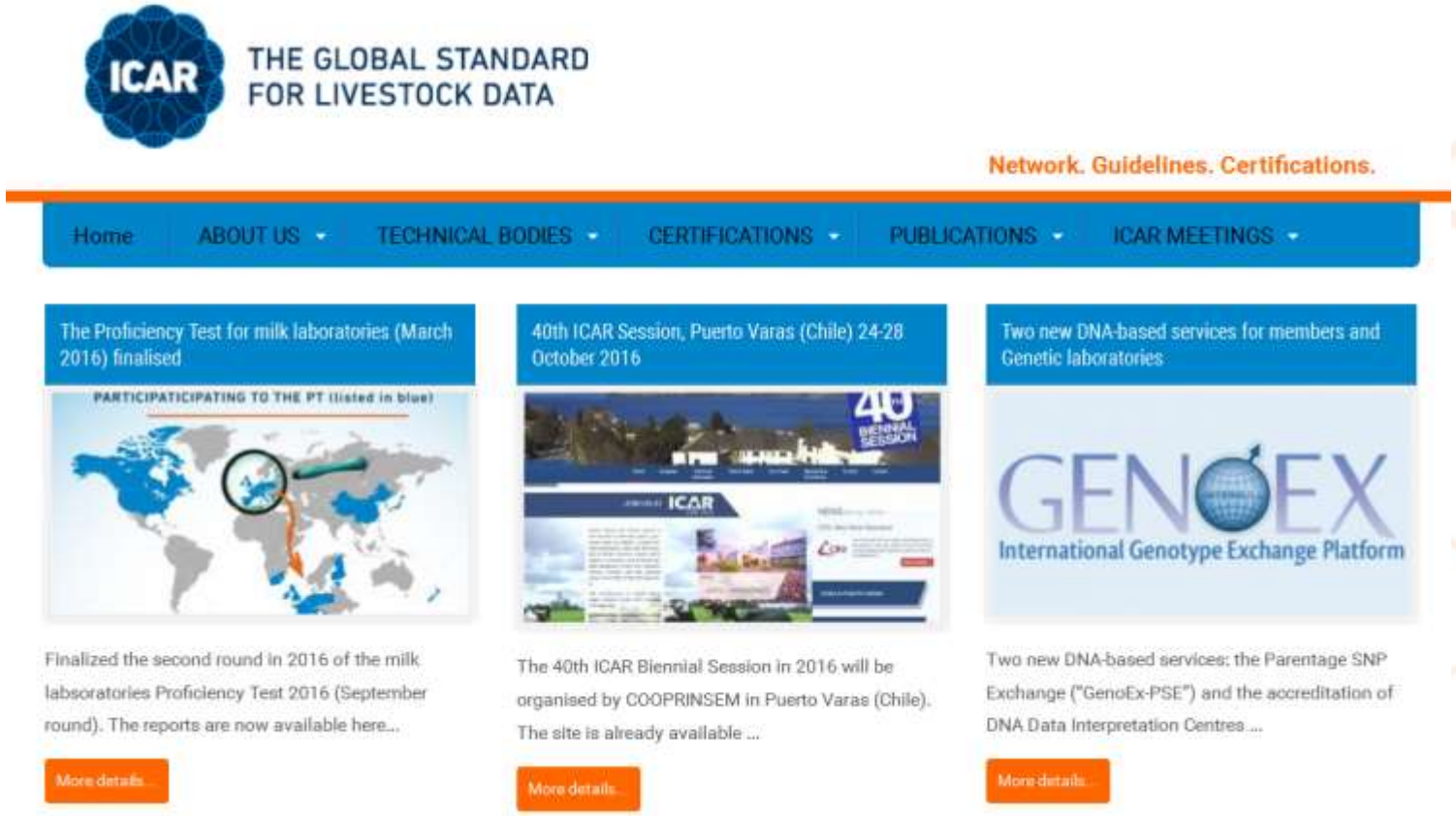
ICAR PT is a central in the ICAR Strategy



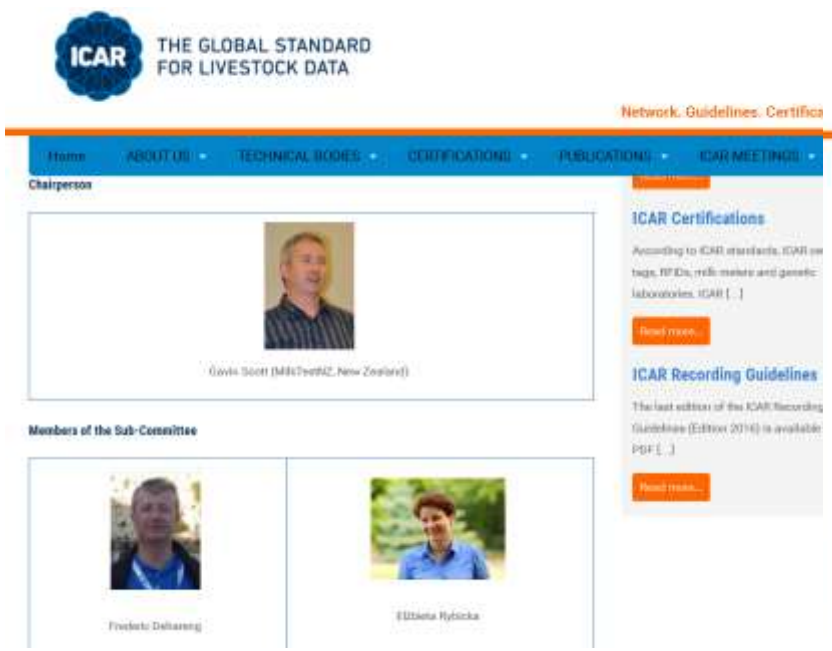
To connect the ICAR ref. laboratory/s to the global ICAR populations

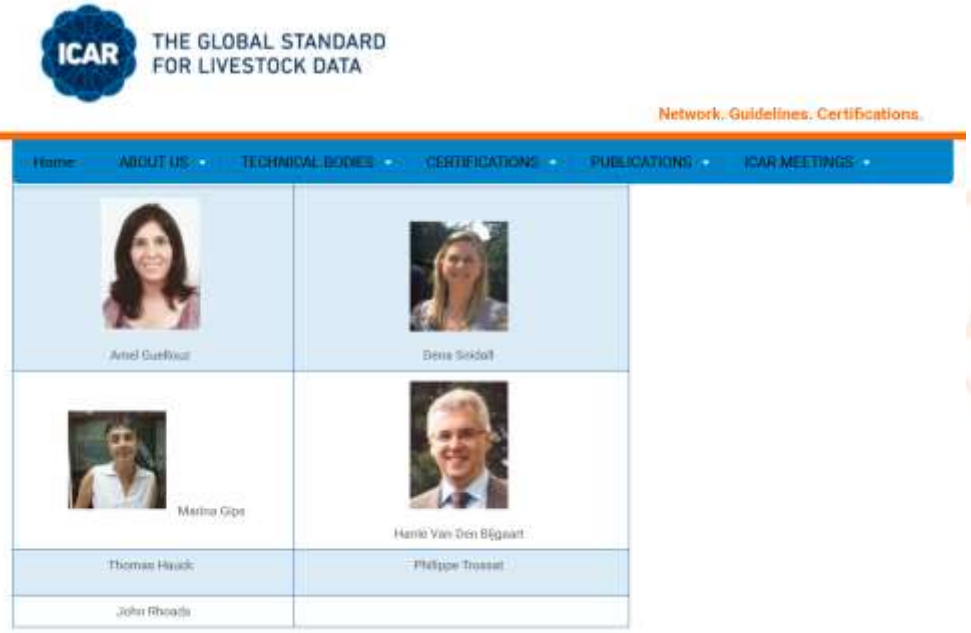
How to joint the ICAR PT

- Visit the ICAR website www.icar.org



How to joint ICAR Milk analyses Sub Committee





As a appointed person of a ICAR member or as direct associated member

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Thank you

Via Savoia 78, esc.A, int.3, piano 1
I–00198 Rome, Italy
tel. +39 - (0)685 127 231 / (0)685 237 237
fax : +39 - (0)623 315 553
e-mail: elena@icar.org
www.icar.org