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## 1.0 A WORD FROM THE PRESIDENT

2018 has been a busy one for ICAR. It kicked off in February with our Annual conference in combination with Interbull and WCGALP. The Conference provided the ideal stage to showcase the work of ICAR's sixteen Groups (Sub-Committees and Working Groups and Task Forces). ICAR Members face many challenges and opportunities as we go into 2019 and beyond. The ICAR Board in its strategy review in November, recognised that our marketplace has now many new actors, where the convergence of sensors and aggregations of data requires us to be agile and adaptable but without losing our integrity and independence.

In 2018 our sixteen Groups paid particular attention to Sensor integration, DNA Accreditation and Genotype Exchange Services, Data Exchange, Animal Health & Welfare, Greenhouse Gas measurements which all contribute to the social licence to produce. We also of course focused on improving our staples services of ICAR's Certification of ID, Milk Analysis and Recording Devices.

This ICAR Newsletter provides you with an update on some of this work from our ICAR Groups, with more details on specific activities to be found on [www.icar.org](http://www.icar.org).

I would like to thank each ICAR member and the several hundred individuals participating in technical groups and especially the ICAR professional staff for all their efforts and cooperation. I also would like to take this opportunity to wish all of our friends and colleagues a happy and peaceful holiday season.

Jay Mattison  
(ICAR President)



## Certifications

### PT milk laboratories

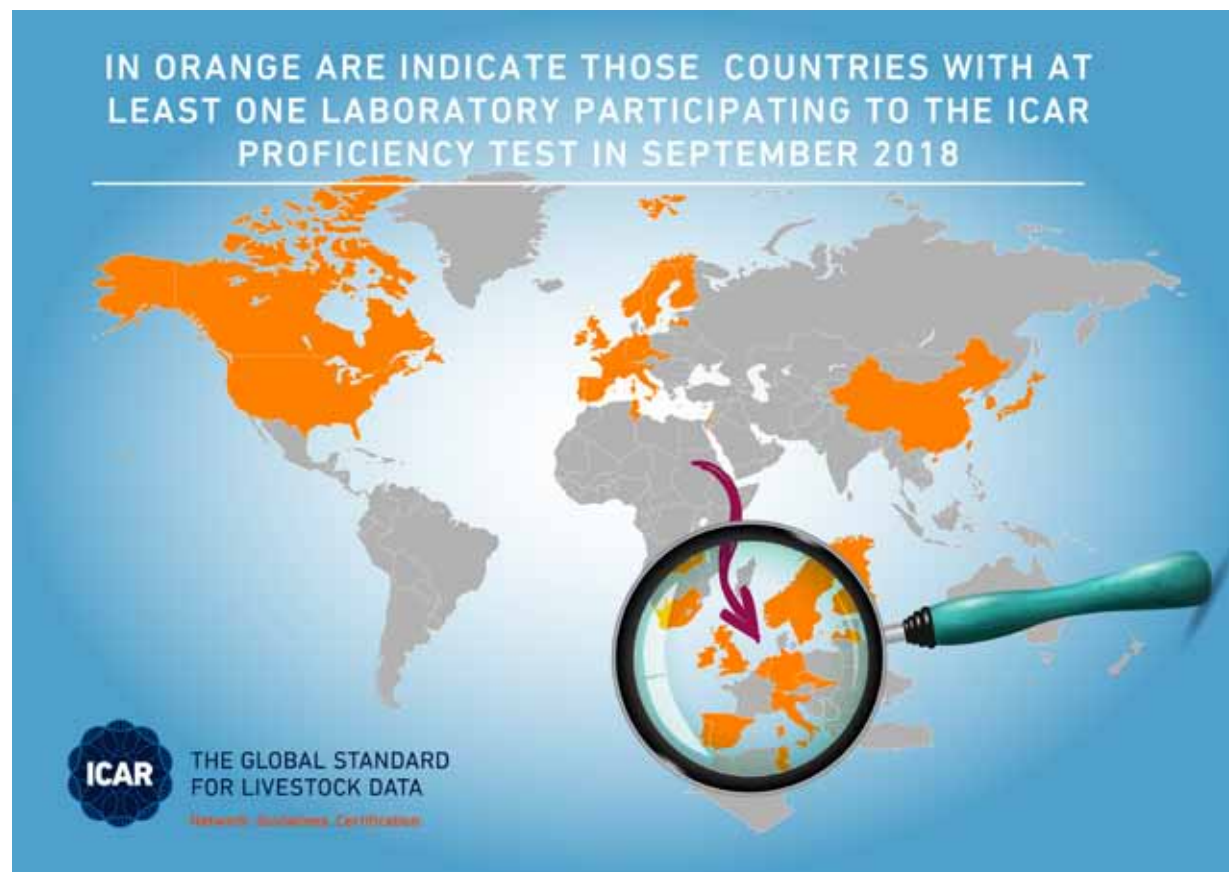
## 2.0 ICAR ACCREDITATIONS AND CERTIFICATIONS

### 2.1 ICAR PROFICIENCY TEST FOR MILK LABORATORIES

ICAR ran two Proficiency Tests for Milk Laboratories, in March and in September. In total, 53 milk laboratories joined the initiative in at least one of the two calls. In September, 42 world-wide milk laboratories took part, both for the Reference and Routine milk analysis. The map shows those countries where at least a milk laboratory joined our PT

The ICAR PT provides an international accredited ISO 17043 Proficiency Test (PT) programme. Participation complies with analytical quality assurance requirements of ISO 17025.

The PT parameters considered in the ICAR PT are: fat, protein, urea, somatic cell, lactose, Beta-Hydroxybutyric (BHB), bacteria DNA (PCR technique) and Pregnancy Associated Glycoproteins (PAG) and for 2019 two PT are confirmed in March and September



## The genotype exchange

### Data Interpretation Centres

## 2.2 ICAR ACCREDITATION FOR DNA DATA INTERPRETATION CENTRES – IS YOUR ORGANISATION PREPARED FOR GENOTYPE EXCHANGE?

### 2.2.1 ACCREDITATION FOR DNA DATA INTERPRETATION CENTRES

Following a successful introduction in 2018, we have now 15 organizations with ICAR accreditation as a DNA Data Interpretation Centre for Parentage Verification. The list of organizations that have already been granted this accreditation for SNP-Based Parentage Verification is available [here](#).

Some benefits of being an ICAR Accredited DNA Data Interpretation Centre are:

1. Independent International validation of your SNP Parentage imputation processes.
2. You meet one of the prerequisites for joining the GenoEx-PSE service.

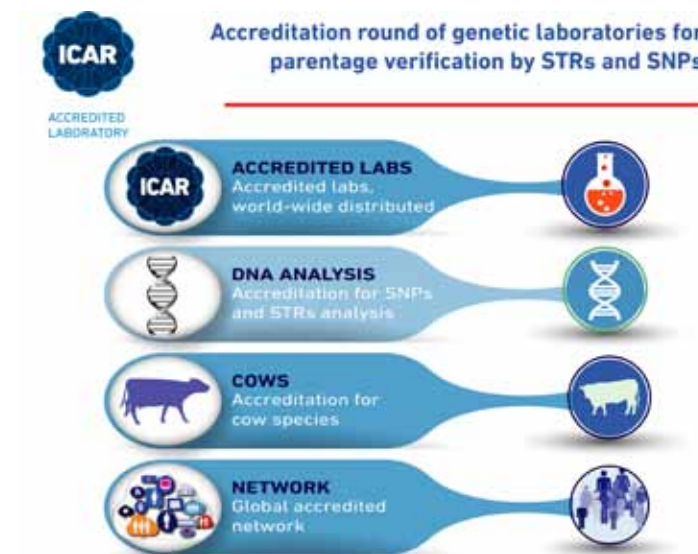
We now are reaching out and encouraging other ICAR Member Organisations, or the affiliated organization(s) nationally responsible for parentage analysis, to now engage so they will be able to enjoy these benefits.

The process steps for applying and being granted ICAR accreditation as a DNA Data Interpretation Centre are as follows:

- ICAR receives application form from applicant ([Application form for ICAR Accreditation of DNA Centres](#))
- ICAR receives payment from applicant (Fee €300, Non ICAR Members Fee €500)
- Interbull Centre sends the 'Test files' to the Applicant.
- The Applicant returns results to Interbull Centre
- Interbull Centre informs ICAR of data file testing outcome (pass/fail).

ICAR copies the Interbull Centre (at [GenoEx@slu.se](mailto:GenoEx@slu.se)) when it informs the applicant of the result and, if successful, the applicant's name is added to the list of accredited organisations, and therewith becomes eligible to apply as a GenoEx-PSE Service User. In the case of rejection, the Applicant is entitled to submit again along with payment of the associated fee.

For further technical guidelines/information on accreditation for DNA Data Interpretation Centres see the ICAR web page available [here](#).



**ACCREDITED DNA DATA  
INTERPRETATION CENTRE**  
for Parentage Verification by SNP

## GenoEx-PSE

### 2.2.2 GENOEX-PSE

GenoEx-PSE was the first service to be launched on the Interbull Centre's the International Genotype Exchange Platform. The main purpose of GenoEx-PSE is to facilitate parentage analysis activities by providing an international genotype exchange platform for exchanging standardized sets of SNP for genotyped animals. This service is currently available for any cattle breed; both beef and dairy. One of the key benefits of joining GenoEx-PSE is that AI bull owners will have more accurate identity of daughters in countries importing semen. GenoEx-PSE is also expected to assist with the transition from the use of microsatellites to the use of SNP for parentage verification.



The first of the ICAR Accredited DNA Data Interpretation Centres have now signed up to GenoEx-PSE. In order to join these organizations, please be aware of the following Annual service fees:

- No service fee due during 2018 and 2019 for eligible organizations signing up to GenoEx-PSE before the end of 2018.
- A reduced fee of €400 for 2019 for eligible organizations signing up to GenoEx-PSE between 1 January and 31 March 2019.
- From 1 April 2019 eligible organizations signing up will pay a pro-rata annual fee of €1000 for 2019. (The 2019 fee will be set at max €600).

From 2020, the annual fee has been established at €1000. All GenoEx-PSE Service Users are expected to upload data within 90 days of signing up to the service.

Further details, including User Manual, Code of Practice and Service User Agreement are available on the GenoEx Website <https://GenoEx.org>.

Further information can be requested from ICAR ([DNA@icar.org](mailto:DNA@icar.org)) or the Interbull Centre ([GenoEx@slu.se](mailto:GenoEx@slu.se))

CoQ

## 2.3 CERTIFICATE OF QUALITY

In total, in second half of 2018, seven ICAR Members renewed their Certificate of Quality, following a Visited audit. In details, the following members successfully passed the visited audit:

1. Agricultural Data Centre (Latvia)
2. Asociația Crescătorilor de Vaci Baltata Romaneasca Simmental (Romania)
3. Bundesverband Rind und Schwein e.V. (Germany)
4. Italian Breeders' Association (AIA)
5. Laboratorium Oceny Mleka KCHZ Laboratorium Referencyjne z/s w Parzniewie (Poland)
6. ProAgria Group (Finland)
7. University of Ljubljana, Biotechnical Faculty (Slovenia)

This certification process confirms the excellence of the procedures followed. It is assured by a team of expert auditors with the support of the ICAR Secretariat.



## CERTIFICATE OF QUALITY



Agricultural Data Centre  
Republic of Latvia



Univerza v Ljubljani  
*Biotebniška* fakulteta



## Groups

### Ai & RT WG

## 3.0 ICAR GROUPS

### 3.1 ARTIFICIAL INSEMINATION & RELATED TECHNOLOGIES WORKING GROUP

The Artificial Insemination & Related Technologies Working Group (AI & RT WG) has, among others, the objective to maintain, update, promote and extend guidelines for recording data associated with artificial breeding (for both male and female gametes, primarily in cattle), and its use to assess reproductive success.

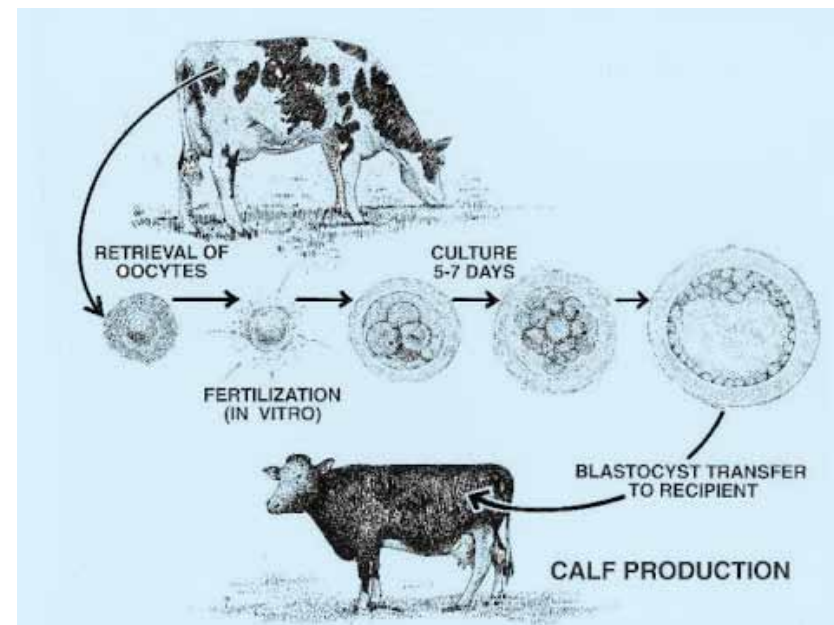
The Working Group is presently monitoring the current technologies used in this context, to evaluate new developments and is trying to promote international collaboration in research and development on all aspects of recording artificial breeding data and its use.

In the recent months, the Working Group focused on three major topics:

1. The constitution of the WG (Chair, members etc.) in order to face the challenges that the technology is demanding.
2. The setting up of a database providing information on straw identification.
3. The establishment of a Proof of Concept of an international database to access information about a semen unit based on its barcode.

All three topics can be characterized as “work in progress”.

Currently a survey is also under way in collaboration with NAAB about barcode labelling systems used by semen collection centres and its use. Setting up an international service for data retrieval on semen units (donor information, production characteristics etc.) based on a machine-readable key on the semen unit looks very promising for facilitating data recording and quality assessment. But it is a long way to go, and interdisciplinary collaboration is needed.



ID SC

### 3.2 ANIMAL IDENTIFICATION SUB-COMMITTEE

The Animal Identification Sub-Committee has been progressing the development of a Field Testing Protocol for Animal Identification Device Retention. In addition to ICAR's existing laboratory and environmental tests for animal identification, the Field Testing Protocol will provide a guide to ear tag manufacturers wishing to undertake field trials of their Devices, on the key trial elements that individual countries may require. The Field Testing Protocol outlines the field trial design principles, the minimum retention requirements recommended by ICAR, and the approach for the analysis of field trial results.

It is expected that the Field Testing Protocol will be finalised in early 2019, following final consultation with the Animal ID Sub-Committee and tag manufacturers, prior to it being taken to the ICAR Board for approval and the General Assembly for comment.

Additional future priorities for the Animal ID Sub-Committee include:

- The development of a testing process for UHF technologies;
- Evaluation as to how the Sub-Committee might look to support and address new technologies within the Guidelines;
- Identifying activities being progressed through the Sensors Working Group that have linkages to animal identification and might require consideration by the Sub-Committee; and
- Considerations in relation to the Animal Identification Number (AIN) that is being developed by the ISO WG3.



## DCMR WG

**3.3 DAIRY CATTLE MILK RECORDING WORKING GROUP**

The most recent version of the dairy cattle milk recording Guidelines was approved in February 2018 at the General Assembly in Auckland.

For the near future, the Working Group will be working on the Guidelines in order to improve and update Procedure 1 in Section 2 of the ICAR Guidelines – Computing 24-Hour Yields. The group is also involved in several research projects directly related to this section. We are currently reviewing the Liu method. At the upcoming working group's meeting in Rome (January 2019), the following items will be discussed:

1. Method C calculations,
2. Galeslout research, and
3. Adapting the Liu method for the Z sampling scheme.

Experts in various fields will be consulted and statistical analysis performed. In addition, the group is actively working on both practical and theoretical aspects with regard to 24-hour calculations for future policy in this field. AMS calculations are also being discussed. Minor improvements are also expected to be made to milk recording issues in the Guidelines, e.g. plausibility checks, individual lactation qualification.

The group recently completed the questionnaire for the 24-hour calculations project, which was distributed in late November. The results will be presented and discussed at the 2019 ICAR congress in Prague. The survey is being carried out in order to gauge the opinions and needs of ICAR members, and is considered essential before any changes are made to the Guidelines.

The group has also been extensively involved in preparations for ICAR 2019. Several members of the group are members of the Programme and Scientific Committee and actively involved in organising the following milk recording workshops and technical sessions:

- Future Daily Yield Calculations for Cattle
- Where Will New Technologies Take Milk Recording?
- Milk recording workshop (Milk Recording Practice and Quality Management)

The group has come up with the idea of holding a roundtable focused on new technologies. It will be a joint project between ICAR working groups attending ICAR 2019.

The WG is also engaged in organising a project on big data, with particular focus on seeking out innovative ways of merging milk recording results with other data sources.

In parallel, the WG is analysing various processes using turtle diagrams and KPIs for use in ICAR cattle milk recording audits. As part of its ongoing work, the group assists on practical milk recording issues faced by ICAR member organisations. The group is also represented on the Sensors Task Force.



## RSD SC

### 3.4 RECORDING AND SAMPLING DEVICE SUB-COMMITTEE MEETING HELD IN POTSDAM

Welcomed by ATB and the German ICAR Test Centre team, the ICAR Recording and Sampling Devices Subcommittee (RSD SC) held its autumn meeting 7-9 November 2018 in Potsdam, Germany. During this meeting, the members worked in several areas that are key to the ICAR processes of guidelines, evaluation and certification of recording and sampling devices. Some of the key areas reviewed include:

- Revision of the test application and steps to certification for recording and sampling devices.
- Review of current devices under test and new technologies in the marketplace.
- Review and action on currently certified devices where ICAR members expressed concerns or requested additional documentation.
- Final launch of the new ICAR web pages for the RSD as well as updated pages for certified milk meters, certified jars, and certified AMS/sampling shuttle combinations.
- Revision of Section 11 of the ICAR Guidelines.
- Planning for the ICAR 2019 meeting in Prague, specifically related to a session called 'Factors affecting the accuracy of recording devices'.



Members of the Recording and Sampling Devices Sub-Committee at the meeting in Potsdam, Germany, in November 2018

In addition to RSD SC meeting, the personnel from the test Centres in France, Germany and the Netherlands met to discuss challenges and opportunities related to test design, data analysis, internal research on factors affecting the accuracy of recording devices and subsequent milk samples. This team approach by the RSD Test Centres helps streamline device testing and delivery of results to both manufacturers and updated certification listings for ICAR members.

In February 2019, the RSD SC will be sending the annual request for member and manufacturer reports. This request, as outlined in the ICAR Guidelines, is used to evaluate ongoing certification of all devices. Manufacturers are required to list all devices sold in the marketplace as well report any modifications in design or software for their devices. All ICAR members are asked to provide a report (template provided) identifying the devices in service in their organization as well noting any concerns about performance or operation. The RSD SC uses this information to bring resolution to reported issues through engagement with device manufacturers where appropriate.

## SD TF

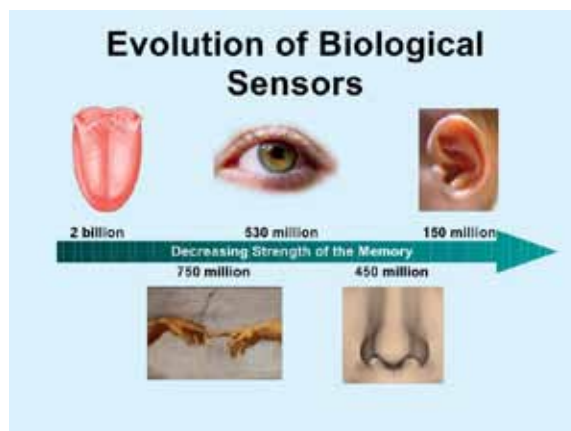
### 3.5 SENSOR DEVICES TASK FORCE

The Sensor Devices Task Force (SD TF), as outlined in the Terms of Reference, is charged with providing leadership and direction to ICAR and its members with respect to the usability of data generated by these devices and guidelines for validation or certification of sensor devices. To accomplish this task, the SD TF has three working goals with a plan for delivery to the ICAR membership over the next 12 months and at the ICAR 2019 meeting Prague, CZ. These goals are:

- Methodology to classify sensor devices and to quantify or assess data usability from these devices.
- Develop guidelines for determining data usability.
- Develop procedures and guidelines for certification or validation of sensor devices.

The SD TF has developed a landing page on the ICAR website with additional information on these goals and links to external reference documents that ICAR members may find of interest. The SD TF also plans on publishing a listing of devices and their respective measurements for reference. This list should be live on the landing page by the end of 2018.

Holding regular conference calls and meetings, the SD TF plans on concluding its work in 2019. At that time, certain aspects of sensor devices testing and validation will move to the Recording and Sampling Devices SC. Further, using the structure created by the task force, other ICAR SC and WG will have tools to develop specific guidelines for new measures related to milk yield and flow, milk composition, live body measurements, activity measurements and feed efficiency measurements.



EAG

### 3.6 EXPERT ADVISORY GROUP ON THE ICAR CERTIFICATE OF QUALITY

After the ICAR Session in Auckland, the group has had two online meetings. Its members have conducted seven full audits and four consultative reviews, all with a favorable outcome.

Between the meetings, the group has been busy with continuing the work initiated in June 2017, analysing processes, identifying quality risks, and finding key performance indicators for the crucial processes based on that work. The first changes in audit questionnaires will appear before the ICAR Session in Prague. So far, this work has been mainly concentrated on dairy cattle milk recording. Other working groups are encouraged to analyse their relevant processes and suggest relevant KPI's to the expert advisory groups in order to measure the quality of work in their respective areas. Our expert advisory group will also continue this work in the near future.

Another great task already completed is the new Guideline section on the ICAR Certificate of Quality (Section 8) which has now been published on the ICAR website. It sets the goals for the work of our expert advisory group and describes the certification process.



## ADE WG

### 3.7 ANIMAL DATA EXCHANGE WORKING GROUP

Since the ICAR annual meeting in Auckland, NZ, the ADE working group has met monthly via conference calls. The group was able to get several new members from equipment manufacturers and software companies added to the working group expanding the demographics of the working group.

The Outreach subgroup has focused on how to create greater interest from manufacturers and have developed a survey with the goal of assessing current implementation of ADE standards and future efforts. This survey will be sent out early 2019 and when summarized will provide an overview of current status in the dairy industry and future plans for each company potentially spurring further interest.

The REST/SOAP working group has outlined a proposal for technical standards that is currently being reviewed by technical experts of multiple organizations/companies. They work together on the JSON Schemas in a GitHub repository. Expectations are to have all input incorporated and a final plan be presented to the ICAR board and industry in 2019.

The Data Dictionary group has discussed several options to develop a flexible framework that will allow greater flexibility to add new data items to the dictionary however needs to be further discussed before a recommendation is provided to the ICAR board.

The next priorities for the upcoming year are:

- Issue a survey to ADE stakeholders to assess status of ADE standards implementation to date and future plans.
- Define a process and implement the tools to support a flexible collaboration on expanding the data dictionary and include items that have been requested but currently not covered.
- Continue to address the REST/SOAP technical aspects using input from technical experts





FG WG

### 3.8 FEED AND GAS WORKING GROUP

The activities performed by the WG are related to stimulating the international research through the gDMI initiative, in particular the area “Biology of feed efficiency”. Also, some European partners developed a business model for international collaboration around a service for breeding value estimation for feed intake in cattle. Furthermore, a scientific paper has been drafted related to protocols for monitoring feed intake of cattle.





FT WG

### 3.9 FUNCTIONAL TRAITS WORKING GROUP

Within the last 6 months a new section about recording, validation and use of claw health data has been included in the ICAR Guideline on Bovine Functional Traits (<https://www.icar.org/Guidelines/07-Bovine-Functional-Traits.pdf> p74-105). This new section of the guideline was outlined at the EAAP-Meeting 2018 in Dubrovnik by Nouredine Charfeddine, member of the WG.

The ICAR FT WG and the international claw health experts are continuing their collaboration. Beside working on regular review, update and improvement of the work done so far regarding foot and leg disorders, the group is currently working on lameness recording. The aim is to compile an overview with the most frequently used scoring systems. Furthermore, the ICAR FT WG has taken up working on welfare indicators together with IDF (International Dairy Federation). The focus within the ICAR FT WG is on animal-based welfare indicators. To ensure efficient work in this field, the ICAR FT WG has been extended by two welfare experts: Marie Haskell from SRUC (Scotland's Rural Collage in Roslin, GB) and Elsa Vasseur from the McGill University in Canada. The ICAR FT WG thanks all who have contributed and indicated continuation of their valuable support of the work of the group.



## SMARTER Project

### 4 ABOUT THE SMARTER RESEARCH PROJECT

On November, the SMARTER Project, where ICAR participates in two work packages had its kick-off meeting in Toulouse. The project will be carried out over four years during which SMARTER will develop and deploy innovative strategies to improve Resilience and Efficiency (R&E) related traits in sheep and goats. SMARTER will accomplish these strategies by:

- Generating and validating novel R&E related traits at a phenotypic and genetic level
- Improving and developing new genome-based solutions and tools relevant for the data structure and size of small ruminant populations,
- Establishing new breeding and selection strategies for various breeds and environments that consider R&E traits.

SMARTER with help from stakeholders chose several key R&E traits including feed efficiency, health (resistance to disease, survival) and welfare. Experimental populations will be used to identify and dissect new predictors of these R&E traits and the trade-off between animal ability to overcome external challenges.

It is expected that SMARTER will estimate the underlying genetic and genomic variability governing these R&E related traits. This variability will be related to performance in different environments including genotype-by-environment interactions (conventional, agro-ecological and organic systems) in commercial populations. The outcome will be accurate genomic predictions for R&E traits in different environments across different breeds and populations.

SMARTER will also create a new cooperative European and international initiative that will use genomic selection across countries. This initiative will make selection for R&E traits faster and more efficient. SMARTER will also characterize the phenotype and genome of traditional and underutilized breeds. Finally, SMARTER will propose new breeding strategies that utilise R&E traits and trade-offs and balance economic, social and environmental challenges.

The overall impact of the multi-actor SMARTER project will be ready-to-use effective and efficient tools to make small ruminant production resilient through improved profitability and efficiency.





## ICAR Conference in 2019

### 5. LAST NEWS FOR ICAR CONFERENCE IN 2019, PRAGUE

ICAR Secretariat and the Local Organising Committee advice that the Registration process for Prague 2019 has been launched.

The page for registering is now available at:

[Register now](#)

In the next days the page for the Abstracts submission will be open, too, offering the chance to submit the Abstracts for acceptance to the LOC and to the Chairs of the ICAR Conference

At the same time, LOC advises that the preliminary programme has already been finalised and that it is has been made available at:

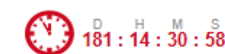
[View now](#)

Last but not the least, the accommodation page in the web site of the ICAR Conference has been designed to collect your reservation to the closes hotels to the Prague Congress Centre (PCC), venue of the ICAR Conference in 2019

[Book now](#)



ICAR 2019 17 - 21 June  
IDF/ISO 2019 21 - 25 June



COMMITTEES SCIENTIFIC PROGRAMME ABSTRACTS **REGISTRATION** ACCOMMODATION SOCIAL EVENTS  
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## REGISTRATION

On-line registration will be open on December 17, 2018.

Registration Fee	Early registration until 31 <sup>st</sup> March 2019	Standard registration from 1 <sup>st</sup> April until 31 <sup>st</sup> May 2019	Late / On-site registration from 1 <sup>st</sup> June 2019
<b>ICAR 2019</b>			
Delegate (+2 workshops)	550 EUR	620 EUR	760 EUR
Invited speaker	0 EUR	0 EUR	0 EUR
Accompanying person	280 EUR	330 EUR	420 EUR
<b>IDF-ISO Analytical Week</b>			
Delegate	360 EUR	400 EUR	550 EUR
One day registration*	150 EUR	180 EUR	220 EUR
Invited speaker	0 EUR	0 EUR	0 EUR
Accompanying person	190 EUR	200 EUR	300 EUR
<b>Combined Registration - ICAR/IDF-ISO Analytical Week</b>			
Delegate	750 EUR	850 EUR	990 EUR
Invited speaker	0 EUR	0 EUR	0 EUR
Accompanying person	450 EUR	500 EUR	600 EUR

\*One-day registration is only allowed for one day during the whole IDF/ISO Analytical Week.  
Registration fees include 21 % VAT.

Note: Payments must be received by the corresponding deadlines (early or standard), otherwise the subsequent rate will be automatically applied.

## ICAR 2019

### The delegate / invited speaker registration fee includes:

- Admission to all scientific sessions
- Admission to all workshops: Interbeef Workshop and Milk recording Workshop on Tuesday, 18 June, 2019
- ICAR Welcome Reception on Wednesday, 19 June 2019
- Admission to the Exhibition area and Poster session
- Congress materials including Programme, Book of Abstract, Book of Proceedings
- Refreshment during coffee breaks
- Lunches
- Free ticket for municipal transport (June 16 - 21, 2019)

### The accompanying person's fee includes:

- ICAR Welcome Reception on Wednesday, 19 June 2019
- ICAR Congress Dinner on Thursday, 20 June 2019
- Half day Prague sightseeing tour
- Free ticket for municipal transport (June 16 - 21, 2019)

### What is not covered by the fee?

- ICAR Congress Dinner on Thursday, 20 June 2019, EUR 65 / per person (Congress Dinner ticket can be booked using our on-line registration system)
- ICAR field trip on Friday, 21 June, 2019, EUR 10 / per person (Field trip ticket can be booked using our on-line registration system)