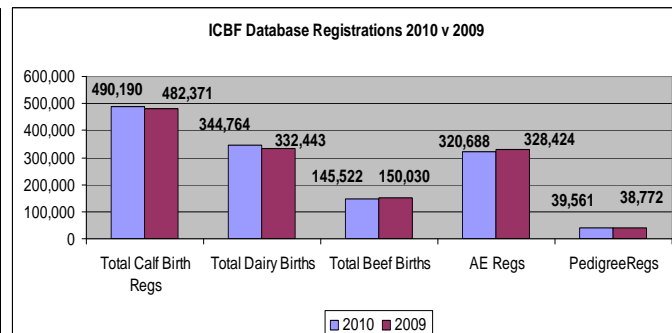
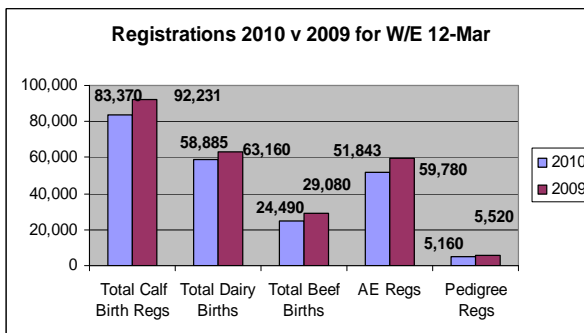


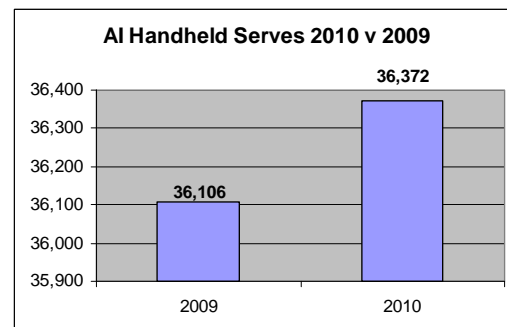
## 1. Important Dates

- ✚ **ICBF Audit & Finance Sub Committee Meeting** – Thursday 25<sup>th</sup> March 2010, 10:00 to 14:00 – Horse & Jockey.
- ✚ **Sheep Breeding Consultation Meeting – Genetic Evaluations** – Wednesday 31<sup>st</sup> March 2010, 10:30 to 14:00 – Maldron Hotel, Portlaoise.
- ✚ **Sheep Board Meeting** – Wednesday 31<sup>st</sup> March 2010, 14:00 to 16:00 – Maldron Hotel, Portlaoise.
- ✚ **ICBF Board Meeting** – Thursday 1<sup>st</sup> April, 10:30 to 14:00 Maldron Hotel, Portlaoise.
- ✚ **Tully Bull Sale** – Monday 3<sup>rd</sup> May 2010 11:00 to 16:00 – Tully Performance Test Centre, Tully. (Note change in date).
- ✚ **ICBF AGM** – 14:30 – 16:00, Thursday 27<sup>th</sup> May at the Maldron Hotel, Portlaoise.
- ✚ **ICAR and Interbull Meetings**, Riga Latvia 31<sup>st</sup> May to 4<sup>th</sup> June. Organisations interested in attending can find further information on the conference website - [www.icar2010.lv](http://www.icar2010.lv).
- ✚ **Sheep 2010, Lyons Estate, UCD** – Saturday 26<sup>th</sup> June. This is a major day for the Irish Sheep industry.

## 2. Database



- ✚ In the Suckler scheme, the number of 2009 born calves with meal introduced is 608,870 with the number of animals weaned at 524,580.
- ✚ Some additional updates to the way ICBF sends the suckler scheme data to DAFF have been tested and are now live.
- ✚ Work is on-going to update the ICBF website to handle the requirements of Animal Health Ireland, beginning with their BVD programme.
- ✚ Progress on a number of issues in relation to the IHFA pedigree certificate were made this week. Work on completing those developments is underway.
- ✚ Final updates to a revised Beef Slaughter report were completed this week. This report will be issued in the coming weeks.



- ✚ The updates to the Beef Eurostar report have been completed. This is to reflect the split in milk and fertility in the latest evaluations.
- ✚ Updates to the Suckler Cow report began this week.
- ✚ The graph (previous page) shows Inseminations recorded on AI Handhelds in 2010 compared with 2009.

### 3. Animal Health Ireland BVD Roadshow

- ✚ Here is the Programme for the forthcoming Animal Health Ireland BVD Roadshow. The Roadshows are the second stage in the promotion of the BVD Guide and part of the dissemination information on best practice in BVD control to farmers and vets. The Roadshows are supported by the local and national stakeholders and without that support it would not be possible to host these events.
- ✚ The measure of the success of the Roadshows will be the number of farmers and vets attending. I strongly urge you to promote the event to your suppliers/members and encourage them to attend. AHI will be sending a reminder nearer the time of each Roadshow so that you can ensure your suppliers/members in the surrounding area of the Roadshow are aware of these important information night(s) on BVD.

All Roadshow meetings will commence at 8.30pm.		Speakers		
Date	Venue			
23/03/10	Clonakilty Agricultural College		Joe O'Flaherty, CEO, Animal Health Ireland	Introduction to Animal Health Ireland, work to date and future plan. Introducing new IT Resource of access BVD testing history through AHI and ICBF website.
25/03/10	Christy's Hotel, Blarney		Vet	Identifying, controlling and managing BVD.
30/03/10	Carlton Hotel (Fels Point), Tralee			
6/04/10	McWilliams Park Hotel, Claremorris		Farmer	On farm experience of the disease.
8/04/10	South Court Hotel, Limerick		Panel	General discussion with Q & A.
12/04/10	Hotel Kilmore, Cavan			
19/04/10	Hotel Killeslin, Portlaoise			
20/04/10	Cillin Hill, Kilkenny Mart, Kilkenny			

### 4. Summary of Interbull Workshop

Key points arising from the Interbull Genomic Workshop held in Paris on 3<sup>rd</sup> and 4<sup>th</sup> March 2010:

#### Participants and Format

- ✚ Some 180 participants from all continents, animal evaluation units (mainly dairy), researchers, Breed Assns, AI industry and Interbull Centre.
- ✚ First day and half (150 participants) was focused on practical issues associated with the use of genomic data in cattle breeding and half a day was focused on communications with the cattle breeding industry (180 participants).

### National Genetic Evaluations that include Genomic Data

- ✚ **Numbers are important.** The larger the training populations the more accurate the national genetic evaluations that incorporate genomic data.
- ✚ **USA & Canada** have established a collaboration agreement in which all genotypes are shared between the animal evaluation units in Canada (CDN) and US (USDA). This means any animal (male or female) that is genotyped in either country automatically gets a genetic evaluation in each country. Genomic evaluations for females are provided to the herd owner through their Breed Assn while those for males are only supplied to one of the participating AI companies. This latter restriction (on males) expires in 2013. To date there have been some 37,000 animals genotyped with the Illumina 50K SNP chip with 27,000 on the US born animals, 7,000 on Canadian and 3,000 for animals born outside the USA & Canada (mainly born in Europe).
- ✚ **Eurogenomics.** Five European organisations (from Germany, France, Netherlands & Scandinavia) are collaborating in the Eurogenomics project that involves genotypes on some 27,000 animals. This collaboration is giving each collaborators access to a larger training population but, so far, does not extend to the provision of genomic evaluations for each young animal genotyped. In this respect, it involves a looser collaboration than exists between Canada & the USA and is based on reciprocity with each of the partners contributing some 4,000 genotypes.
- ✚ **Accuracy of Genomic Evaluations.** There are two key issues in the computation of national genomic evaluations that must be adequately addressed. The first is to ensure that the scale and average of the bulls with genomic data is fairly comparable with that for animals with progeny and own performance based evaluations. Failure here can result in either over- or under-utilization of the genomically evaluated animals. Second is the reliability – if this biased up or down again the result can be over- or under-utilisation of genomically evaluated animals. Both issues are the subject of a considerable amount of research and an initiative by Interbull to design validation tests which can be used to determine if an animal evaluation unit in a country is using methods that perform well in both respects. Initial work was reported and a number of issues identified for further consideration. The goal is to have a validation test available for later in 2010.
- ✚ **GMACE.** Currently there are a number of AI organizations who are not making the genotypes of their bulls available for incorporation into national genomic evaluations for countries other than those where the company is based (eg USA, Canada, New Zealand, the Netherlands ...). Interbull is supporting an international effort to develop a system (GMACE) to facilitate these exporters. Initial research has identified a method for providing genomic evaluations to Interbull which can then be incorporated into the national evaluations for importing countries. Results reported at the workshop demonstrated that the method requires more information from the exporter (and importer) that is currently available from most national evaluation units and that also the accuracy of GMACE is very sensitive to this information being correct and accurate. One of the key issues is that the overlap in training populations between countries contribution data needs to be fully reported to avoid errors. Further testing is planned with a view to having a pilot service later in 2010.
- ✚ **No to GMACE.** Ireland does not plan to use GMACE for imported bulls. Rather we plan to use the genotypes directly in our national evaluations. Discussion at the workshop indicated that this approach is preferable providing the importing country has a “good” genomic evaluation system.
- ✚ **Interbull Genomics.** A third approach to providing national genomic evaluations is being researched for the Brown Swiss breed. All genotypes are provided to the Interbull centre which then computes the genomic breeding values in the base and scale of each country and provides these to the country for incorporation in their national evaluations. The database of 3,000 genotypes for this work has been established at the Interbull Centre and research is now underway. This Approach was said to be theoretically better than the GMACE approach suggested for Holsteins
- ✚ **IGenoP.** Ireland is promoting the concept of an International Genomic Partnership (IGenoP) in which genotypes are stored at Interbull for animal evaluation units who are prepared to share them. Key elements of the proposal are that only those units accepting a code of practice including that they;

- a) contribute all genotypes they own,
- b) only use the genotypes for research and the provision of genomic evaluations in their country base and units,
- c) cover their share of the costs of the Interbull facility, and
- d) share software using [www.genomicselection.net](http://www.genomicselection.net).

### Technology Developments

- ✚ **Illumina** have a number of new genomic tests in development that will be available for use later in 2010. These include a new high density chip (Bovine HD) with some 750,000 SNPs, and a 3,000 SNP chip (Bovine 3K). The impact of these on cattle breeding is likely to be substantial for the following reasons:
- ✚ **Bovine HD** – the much greater number of markers is expected to facilitate the use of genomic selection across breeds and thus to be particularly useful for beef. ICBF & Teagasc have been waiting for this tool (or something similar from another company) before genotyping beef bulls in a joint research initiative. Similar effort in other countries for beef and dairy are anticipated. The cost of this chip has yet to be finalized.
- ✚ **Bovine 3K** - this new low density chip has been designed to be low cost (ca €50 per test) and to give up to 95% accuracy in imputing results for the current Bovine 50K. It is expected that there will be a large amount of extra testing of cows and bulls facilitated by the lower cost. It can also be used for parentage testing. One possible model for the Bovine 3K is that it would be used to screen large numbers of candidates for selection and then those that are selected would also be genotyped using the Bovine 50K. Another possible use of the 3K chip is that it might be used to select replacement heifers in dairy herds. This will be determined in part by the final cost of the test. Teagasc and ICBF will start to undertake research on the accuracy of this method for Ireland.
- ✚ **Imputing** is a tool which can be used to “convert” results from one type of SNP chip to another of similar or higher densities. All that is needed is a number of animals genotyped using both types of chips.

### Breeding Scheme Implications

- ✚ **Loss of Genetic Variation / Concentration on a small number of families.** There was a lot of concern and discussion about the risk genetic variation being lost due to only a small number of families being used in AI. This risk has always been present but with the more rapid genetic progress facilitated by genomic selection the potential for accelerated increases in inbreeding exists. While genomic selection, can in theory be used to reduce the build up of inbreeding, the market driven approach employed by many AI companies means that only a limited number of families will be popular with customers. At the very least there is a need for greater transparency on the selection decisions being made by AI companies so that the potential for this problem can be monitored and action initiated before too much damage to future generations has occurred.
- ✚ **Reduction in use of daughter proven bulls.** There has been a rapid reduction in the use of daughter proven dairy bulls in those countries that have implemented genomic selection. Like Ireland some other countries (France, US) are reporting a 25-35% usage of genomically selected bulls. Some expect that the use of daughter proven bulls will further decline in the future. More young bulls are being used with each having smaller numbers of offspring than has been the case with daughter proven bulls. The number of bulls being entered into structured progeny testing has declined although there is near universal agreement that progeny testing and performance is required for constant validation and recalibration of genomic evaluations. Opinion is divided on whether the cost of semen will decline with the use of genomic selection. The key consideration is the extent to which performance recording will need to be supported through semen prices. While AI centre costs are being reduced there is a view that AI companies will need to fund performance recording to ensure genomic selection remains fully validated in future generations.

- ✚ **Loss of accuracy in future generations.** There is evidence that the accuracy of genomic predictions will decline in future generations if they are not being updated every generation. This is potentially a serious issue in beef breeding where the predictions are based on data collected in experimental situations and then applied to commercial populations. Continuous collection of phenotypes is vital to maintain accuracy of selection.
- ✚ **More balanced selection.** In addition to giving 50% or greater increases in annual genetic gain, genomic selection enables more emphasis of selection for traits expressed later in the animals life and to traits that are difficult to measure. The indications are that fertility and production at older ages will benefit more from genomic selection than in the traditional progeny test breeding scheme. Response to selection on all traits will be more reflective of actual economic values and not be distorted by differences in heritability.
- ✚ **New Traits.** There is a major potential to incorporate new traits in breeding programs. These might include disease resistance, milk components and other difficult to measure traits. However, these developments will depend heavily on the availability of these traits being recorded in large well designed research studies. Ireland needs to prioritize this.
- ✚ **Downside Risk for Traits not Recorded.** If there are traits that are currently not being recorded that are negatively correlated with the traits included in genomic selection then these could deteriorate rapidly. To minimize this risk recording and reporting of farmer concerns and observations may need to be improved. Again, Ireland needs to prioritize this.

### Other

- ✚ **EU Trade Regulations** – should it be a requirement for trade across EU borders (internally and externally) that the results of all genomic tests be provided to the national animal evaluation units of both the exporting and importing countries? A requirement such as this would facilitate the availability of more accurate genomic evaluations in semen importing countries.
- ✚ **Lessons from Human Genomic Research** – openness and sharing facilitated by public databases is enabling discoveries not possible in single smaller research studies. One immediate suggestion is that full gene sequences for popular bulls be made public to encourage research and to facilitate the development of imputation from smaller chips.
- ✚ **Role for Smaller Breeding Companies** – genomic technologies open up the possibility of smaller breeding companies emerging. The cost of entry to AI has been reduced dramatically as the large investment in extensive bull holding facilities, bull ownership and progeny testing has been largely eliminated or substantially reduced. This could result in the re-emergence of local breeding programs targeted at specific environments and product markets. This is seen as a particular threat by some of the existing AI Companies.

## 5. GENIreland®

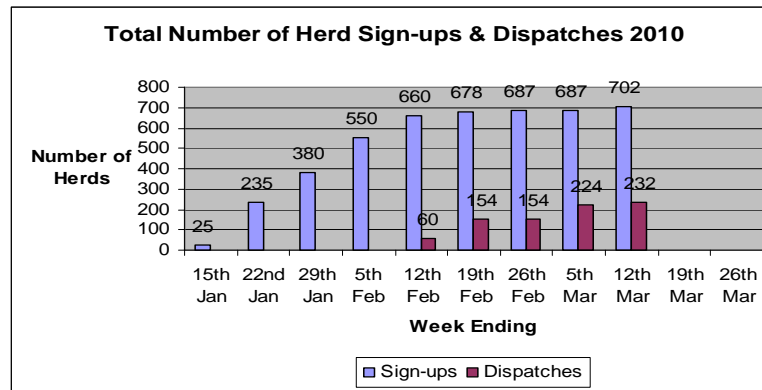
### Beef

- ✚ Sign ups have reached 166 herds.
- ✚ Total straws sent out per bull currently on the panel are in the table below.

BREED	SI	SA	SH	HE
CODE	HSY	BHU	CZB	AGI
STRAWS	560	446	650	260

## Dairy

- Breeds available for the programme at the moment include Jersey, Jersey-Cross, Friesian and Norwegian Red. Further calls will be made next week to herdowners who may be interested in getting these breeds.



## 6. GROW<sup>®</sup> – Linear Scoring & Weight Recording

- Linear Scorers attended the Hereford Sale in Roscommon on Tuesday to explain the new scoring rules to breeders.
- The top price was achieved by a bull out of Corlismore Pompeii who is the highest muscle Hereford on the new BLUP system.
- Work is continuing to highlight the benefits of the new system to all breeds which now have BLUPs with the aim of increasing the level of scoring in pedigree herds.

## 7. Sheep Ireland

### Central Progeny Test

- The CPT lambs being born this week represents a major milestone for the Sheep Ireland Breeding Program.
- Since the beginning of August 2009 the focus of Sheep Ireland was to establish the Sheep Ireland ‘Central Progeny Test (CPT)’ Program.

### CPT Background

- The overall objective of the program is to: ‘Assess a large number of Rams for economically important traits, through their progeny, & link this information to an even wider number of animals throughout that Breed’s Pedigree System.
- It is an extremely important part of the overall Sheep Ireland Project as it ultimately provides a large volume of high quality sheep breeding data that will then benefit each of the breeds involved.
- The CPT is set up not as a breed comparison, but rather as a **ram** and **trait** comparison. It will be focused on identifying the best genetics regardless of breed. Genetic links between breeds and breeding groups established through the CPT will in time be used in large scale evaluations performed across flocks and across breeds by Sheep Ireland. The intention is to evaluate as many new sires as possible each year, while having as wide a presence as possible throughout Ireland.

The CPT is set up to:

- Examine how much industry rams vary in carcass merit.

- Examine how much industry rams vary in maternal merit.
- Foster links between Breed Societies, ram breeding groups, and the wider breeding industry.
- Identify leading sires and benchmark sires.
- Demonstrate to the industry the extent to which rams vary in the value they could add to farm returns.
- To collect data which improve our understanding of the genetic control of carcass merit and maternal merit and their relationship with other economically important traits.

✚ As a reminder, Following is a link to a full report that gives details on the establishment of the CPT Program in 2009: [http://www.sheep.ie/publications/files/cpt\\_presentation\\_20091022.pdf](http://www.sheep.ie/publications/files/cpt_presentation_20091022.pdf).

### CPT Lambing 2010

- ✚ The CPT flocks have now completed the majority of their lambing.
- ✚ To-date 2,879 (1,434 Male/1,445 Female) lambs have been EID tagged.
- ✚ Mortality is running at 3.5%.
- ✚ These lambs have all:
  1. Been Linked to their Dam.
  2. Been Weight Recorded.
  3. Had their Sex Recorded.
- ✚ Lambing Difficulty has also been recorded for every lambing.
- ✚ All of this data has been recorded through Electronic Handheld Units whose software was developed by ICBF.
- ✚ Crucially, all of this data is now saved in the Sheep Ireland database in Bandon.

### Lambplus

- ✚ LambPLUS breeders continue to enter Lambing & 40 Day weighing and rearing data.

### MALP

- ✚ MALP farmers are receiving hand held computers today (Friday) and early next week.
- ✚ This is a major step forward for the MALP Breeding scheme in terms of data recording.
- ✚ Again, this data when recorded electronically will be readily available for genetic evaluations thus reducing time lag between incidence recording & evaluation as well as improving accuracy of data recorded.



Set of EID Tags being used on lambs in CPT Flocks.



Newborn Lamb in CPT Flock



Picture of EID Reader & Weigh Clock together with 2 lambs showing their EID tags together with their dam – also showing an EID tag.



Ewes after lambing in CPT Flock.



Ewe with 2 Lambs in CPT Flock



Ewes in CPT flock showing orange EID tags.





CPT Lamb being tagged with an EID tag.



Ewes & Lambs in CPT Flock. All lambs are tagged with EID tags and linked to their dams who also have EID tags. The lambs, date of birth, sex, birthweight & lambing difficulty is also recorded.

## 8. HerdPlus

- ✚ This week saw the HerdPlus membership grow to over 7,000 customers.
- ✚ The 'Arrabawn Milk Performance' report was posted to all the Arrabawn suppliers in the database this week. Feedback on these reports has been extremely positive and we are currently processing data for Wexford, and Barryrore which we hope to post next week. We hope that other co-ops will come on board with this project in the near future. A report for discussion groups is also being developed for participating co-ops.

## 9. Genetic Evaluations

- ✚ Most of the extracts for the upcoming April routine run for both dairy and beef have been completed. Evaluations will commence over the weekend.
- ✚ Francis Kearney gave a presentation on EBI developments to a group of farmers at a Munster AI meeting on Tuesday night.
- ✚ Farmers now have the ability to view the new live Active Bull List on the ICBF website. If you click on the "Active Bull Lists" on the home page, the resulting page now includes a new entry, which shows the live Active Bull Listing which will change as bulls get added/removed/edited through the screens that AI companies have. This currently has 400 "Active dairy bulls" with semen available. The list is sorted on EBI and can be downloaded into Excel for further analysis.
- ✚ Niall Kilrane represented ICBF at the Hereford Society's March sale in Roscommon this week. Interestingly the day's top price of €3,700 was given for a linear scored November '08 born bull sired by Corlismore Pompeii who is currently the top muscled Hereford in the newly released ICBF linear genetic evaluations. The bull had a five star rating for SBV, Weanling Export and Beef Carcass.

## 10. Milk Recording

National Milk Recording Results by County - 10 day Period 02/03/10 to 12/03/10								
	No. Herds Recorded	No. Cows Recorded	Average Herd Size	Average 24hr Milk kg/Cow	Average Fat %	Average Protein %	Average F + P kg	Average SCC
CARLOW	11	617	56	25.5	4.26	3.45	1.97	443
CAVAN	25	913	37	25.2	4.04	3.34	1.86	404
CLARE	8	336	42	26.3	3.79	3.23	1.85	318
CORK STH	222	9,670	44	23.3	4.03	3.32	1.71	323
CORK NTH	199	9,445	47	23.9	4.24	3.25	1.79	311
DONEGAL	4	153	38	22.8	4.21	3.20	1.69	379
DUBLIN	7	330	47	23.4	3.81	3.21	1.64	350
GALWAY	16	702	44	25.0	4.08	3.27	1.84	413
KERRY	108	4,584	42	26.2	4.01	3.25	1.90	436
KILDARE	20	984	49	24.6	4.12	3.36	1.84	376
KILKENNY	32	2,438	76	21.7	4.25	3.32	1.64	363
LAOIS	21	1,318	63	19.5	4.23	3.43	1.49	538
LEITRIM	4	145	36	26.9	4.10	3.21	1.97	286
LIMERICK	82	3,035	37	24.2	4.02	3.21	1.75	368
LONGFORD	5	132	26	20.2	4.22	3.47	1.55	412
LOUTH	13	931	72	24.3	3.96	3.30	1.76	360
MAYO	21	713	34	24.6	4.08	3.33	1.82	410
MEATH	46	3,548	77	23.7	4.09	3.35	1.76	337
MONAGHAN	20	822	41	26.7	3.93	3.24	1.91	314
OFFALY	11	422	38	22.4	4.00	3.32	1.64	444
ROSCOMMON	2	72	36	28.0	4.19	3.14	2.05	476
SLIGO	5	154	31	26.6	3.93	3.38	1.94	311
TIPPERARY NTH	15	771	51	19.6	4.34	3.37	1.51	360
TIPPERARY STH	20	1,252	63	21.7	4.19	3.31	1.63	457
WATERFORD	27	1,819	67	24.8	4.18	3.30	1.86	330
WESTMEATH	13	703	54	24.8	4.11	3.19	1.81	361
WEXFORD	50	2,920	58	22.3	4.20	3.41	1.70	388
WICKLOW E	15	1,141	76	24.9	3.71	3.33	1.75	283
WICKLOW W	17	1,423	84	23.9	4.27	3.32	1.81	411
	No. Herds Recorded	No. Cows Recorded	Average Herd Size	Average 24hr Milk kg/Cow	Average Fat %	Average Protein %	Average F + P kg	Average SCC
National	1,039	51,493	51	24.0	4.09	3.30	1.78	378

National Milk Recording Averages by Province - 10 day Period 02/03/10 to 12/03/10								
Provincial	No. Herds Recorded	No. Cows Recorded	Average Herd Size	Average 24hr Milk kg/Cow	Average Fat %	Average Protein %	Average F + P kg	Average SCC
Munster	681	30,912	45	23.8	4.10	3.28	1.75	363
Leinster	261	16,907	65	23.2	4.08	3.34	1.72	390
Connacht	48	1,786	37	26.2	4.08	3.27	1.93	379
Ulster	49	1,888	39	24.9	4.06	3.26	1.82	366

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