GENERAL FILE FORMAT FOR COMBINED INTERBULL INTERNATIONAL EVALUATIONS, FOREIGN EVALUATIONS OF COWS AND WALLOON EVALUATIONS.

(record length =972)

File[0]	Starting Byte	Field Description	Format	Example
Pedigree				
		Animal International identification[1]		
S	1	Breed[2] of animal	character 3	HOL
C / S	4	Country of first registration of animal[3]	character 3	CAN
C / S	7	Sex	character 1	M
C / S	8	ID number of animal[4]	character 12	000000387627
C / S	20	Name of animal[5]	character 30	
C / S	50	Birth date of animal (YYYYMMDD)	integer 8	19851005
		Animal identification in Walloon Region (WR)[6]		
S	58	Breed[2] of animal	character 3	
S	61	Country[3]	character 3	
S	64	Sex	character 1	M
S	65	ID number of animal[4]	character 12	
		Sire of animal international identification[1]		
C / S	77	Breed[2] of sire of animal	character 3	
C / S	80	Country[3]	character 3	
C / S	83	Sex	character 1	M
C / S	84	ID number of sire of animal[4]	character 12	
		Dam of animal international identification[1]		
C / S	96	Breed[2] of dam of animal	character 3	
C / S	99	Country[3]	character 3	
C / S	102	Sex	character 1	F
C / S	103	ID number of dam of animal[4]	character 12	
		Maternal-grand-sire (MGS) of animal international identification[1]		
C / S	115	Breed[2] of MGS of bull	character 3	
C / S	118	Country[3]	character 3	
C / S	121	Sex	character 1	F
C / S	122	ID number of MGS of animal[4]	character 12	
Dairy production proof				
		General information		
C / S	134	Date of national evaluation	integer 6	202012
C / S	140	Country sending the information[7]	character 6	BELWAL

File	Starting Byte	Field Description	Format	Example
C / S	146	Reference base definition[8]	character 6	2020HC
C / S	152	Unit of mesurement[9]	character 3	KGS
C / S	155	Genetic merit definition[10]	character 2	BV
S	157	Number of herds[11]	integer 6	
S	163	Number of daughters[11]	integer 7	
S	170	Number of daughters present in WR[12]	integer 6	
		Producing Ability[22]		
C	176	Milk	integer 5	
C	181	Fat	integer 4	
C	185	Protein	integer 4	
C	189	Fat percent	real 5.2	
C	194	Protein percent	real 5.2	
		Production breeding values[22]		
C / S	199	Origin of the solution[13]	character 3	IP1
C / S	202	Reliability	integer 2	89
C / S	204	Milk	integer 5	
C / S	209	Fat	integer 4	
C / S	213	Protein	integer 4	
C / S	217	Fat percent	real 5.2	
C / S	222	Protein percent	real 5.2	
C	227	Reliability parent average	integer 2	
C	229	Parent average Milk	integer 5	
C	234	Parent average Fat	integer 4	
C	238	Parent average Protein	integer 4	
Somatic Cell Score (SCS) proof				
		General information		
C / S	242	Date of national evaluation	integer 6	202012
C / S	248	Country sending the information[7]	character 6	BELWAL
C / S	254	Reference base definition[8]	character 6	2020HC
C / S	260	Genetic merit definition[10]	character 2	BV
S	262	Number of herds[11]	integer 6	
S	268	Number of daughters[11]	integer 7	
S	275	Number of daughters present in WR[12]	integer 6	
		SCS breeding value[23]		
C / S	281	Origin of the solution[14]	character 3	IG1
C / S	284	Reliability	integer 2	
C / S	286	SCS	real 4.	110

File	Starting Byte	Field Description	Format	Example
Type production proof				
		General information		
C / S	290	Date of national evaluation	integer 6	202012
C / S	296	Country sending the information[7]	character 6	BELWAL
C / S	302	Reference base definition[8]	character 6	2020HC
C / S	308	Genetic merit definition[10]	character 3	RBV
S	311	Number of herds[11]	integer 6	
S	317	Number of daughters[11]	integer 7	
S	324	Number of daughters present in WR[12]	integer 6	
		Type Breeding values[21,22]		
		33 times repeated bloc[15]		
C / S	330+11*(i)	Reliability of evaluation for this trait	integer 2	
C / S	332+11*(i)	Source of evaluation code for this trait[16]	character 3	C only for trait 1
C / S	335+11*(i)	Conformation trait evaluation	real 6.2	
Economic values				
		Production economic index (V€L)[20, 21,22]		
C / S	693	Reliability	integer 2	
C / S	695	Value	integer 4	
		Member economic index (V€M) [20, 21,22]		
C / S	699	Reliability	integer 2	
C / S	701	Value	integer 4	
		Capacity economic index (V€C) [20, 21,22]		
C / S	705	Reliability	integer 2	
C / S	707	Value	integer 4	
		Udder economic index (V€P) [20, 21,22]		
C / S	711	Reliability	integer 2	
C / S	713	Value	integer 4	
		Functional Type economic index (V€T) [20, 21,22]		
C / S	717	Reliability	integer 2	
C / S	719	Value	integer 4	
		Functional economic index (V€F) [20, 21,22]		
C / S	723	Reliability	integer 2	
C / S	725	Value	integer 4	
		Global economic index (V€G) [20, 21,22]		
C / S	729	Reliability	integer 2	
C / S	731	Value	integer 4	

File	Starting Byte	Field Description	Format	Example
Longevity proof				
		General information		
C / S	735	Date of national evaluation	integer 6	202012
C / S	741	Country sending the information[7]	character 6	BELWAL
C / S	747	Reference base definition[8]	character 6	2020HC
C / S	753	Genetic merit definition[10]	character 2	BV
S	755	Number of herds[11]	integer 6	
S	761	Number of daughters[11]	integer 7	
S	768	Number of daughters present in WR[12]	integer 6	
		Longevity breeding values[23]		
C / S	774	Origin of the solution[17]	character 3	PM1
C / S	777	Reliability	integer 2	
C / S	779	Longevity	real 4	95
Female Fertility proof				
C / S	783	Date of national evaluation	integer 6	202012
C / S	789	Country sending the information[7]	character 6	BELWAL
C / S	795	Reference base definition[8]	character 6	2020HC
C / S	801	Genetic merit definition[10]	character 2	BV
S	803	Number of herds[11]	integer 6	
S	809	Number of daughters[11]	integer 7	
S	816	Number of daughters present in WR[12]	integer 6	
		Female Fertility breeding values[24]		
C / S	822	Origin of the solution[18]	character 3	IG1
C / S	825	Reliability	integer 2	
C / S	827	Female Fertility	real 6	
Body Condition Score (BCS) proof				
C / S	833	Date of national evaluation	integer 6	202012
C / S	839	Country sending the information[7]	character 6	BELWAL
C / S	845	Reference base definition[8]	character 6	2010HC
C / S	851	Genetic merit definition[10]	character 2	BV
S	853	Number of herds[11]	integer 6	
S	859	Number of daughters[11]	integer 7	
S	866	Number of daughters present in WR[12]	integer 6	
		Body Condition Score breeding values[25]		
C / S	872	Origin of the solution[19]	character 3	DP1
C / S	875	Reliability	integer 2	
C / S	877	Body Condition Score	real 7.3	
Direct and Maternal Calving Ease proof				
C / S	884	Date of national evaluation	integer 6	202012
C / S	890	Country sending the information[7]	character 6	BELWAL
C / S	896	Reference base definition[8]	character 6	2020HC
C / S	902	Genetic merit definition[10]	character 2	BV

		Direct Calving Ease		
S	904	Number of herds[11]	integer 6	
S	910	Number of daughters[11]	integer 7	
S	917	Number of daughters present in WR[12]	integer 6	
		Direct Calving Ease breeding values[24]		
C / S	923	Origin of the solution[26]	character 3	IG1
C / S	926	Reliability	integer 2	
C / S	928	Direct Calving Ease	real 6	112
		Maternal Calving Ease		
S	934	Number of herds[11]	integer 6	
S	940	Number of daughters[11]	integer 7	
S	947	Number of daughters present in WR[12]	integer 6	
		Maternal Calving Ease breeding values[24]		
C / S	953	Origin of the solution[26]	character 3	DP1
C / S	956	Reliability	integer 2	
C / S	958	Maternal Calving Ease	real 6	98
C / S	**964**	**NUMERO INTERNE**	**Integer 8**	

0. Publication file: C if the data is present in the cow file and S if it's in the sire file (the only file available on www.elinfo.be is the sire one).

1. Identification in the country of first registration, as known in the country sending this information.

2. HOL = Holstein-Friesian type; RED = Red-and-White type; BBM = Belgian-Blue type; MRY = MRY; MON = Montbeliard type; SIM = Simmental; MSH = Milking Shorthorn type; JER = Jersey type; XXX = Crossbred.

3. Country codes; INTERBULL codes in English:

CAN	Canada	ROM	Romania	NZL	New Zealand
USA	United States of America	CHE	Switzerland	TUR	Turkey
		CSK	Czech Republic	MAR	Morocco
RUS	Russia	AUT	Austria	TUN	Tunisia
NLD	Netherlands + (Flemish Region)	GBR	United Kingdom	PRT	Portugal
		DNK	Denmark	LUX	Luxembourg
BEL	Belgium (Walloon Region)	SWE	Sweden	IRL	Ireland
		POL	Poland	FIN	Finland
FRA	France	DEU	Germany	EST	Estonia
ESP	Spain	MEX	Mexico	ISR	Israel
HUN	Hungary	BRA	Brazil		
ITA	Italy	AUS	Australia		

4. All ID numbers: Registration numbers, right justified, leading blanks as zeros.

5. Name: Left justified, blanks not as zeros.

6. For the situation of Walloon region, importing major part of sire semen comes from abroad, the Walloon identification of sires is generally the same as the international one.

7. BELWAL = Walloon region, the southern part of Belgium.

8. Reference base definition:

   2020HC: based on all cows with production records and born in 2015.

9. Unit of expression of national proof: KGS = kilogram.

10. BV = Breeding Value.

    RBV = Relative Breeding Value.

11. Number of herds and daughters of the bull in all INTERBULL participating countries. (Or same number in Wallonia if the solution is domestic).

12. Number of WR daughter contributing to the published solutions.

13. Origin of evaluation code for production:

For sires:

Code "IP1": Sires with an INTERBULL evaluation coming from MACE evaluation (Polygenic), considered publishable in their country, and having at least 50% INTERBULL reliability.

Code "IG1": Sires with an INTERBULL evaluation coming from GMACE evaluation (Genomic), considered publishable in their country, and having at least 50% INTERBULL reliability.

Code "DP1": Sires with a Walloon (Domestic) Polygenic proof and having at least 50% domestic reliability.

Code "DG1": Sires with a Walloon (Domestic) Genomic proof for which its genotype is available, and having at least 50% domestic reliability.

Code "DG0": Sires with a Walloon (Domestic) Genomic proof for which its genotype is not available, and having at least 50% domestic reliability.

Only proofs for sires born after January 1, 1985 are published.

For cows:

First character = D: sire breeding value comes from **D**omestic evaluation

First character = I: sire breeding value comes from **INTERBULL** evaluation

First character = M: sire breeding value **M**odified by INTERBULL or foreign evaluation.

Second character = D: dam breeding value comes from **D**omestic evaluation

Second character = F: dam breeding value comes from **F**oreign evaluation

Second character = M: dam breeding value **M**odified by INTERBULL or Foreign evaluation.

Third character = 1: cow performance used in calcul **1**

Third character = N: cow has **N**o performance registered, her value is estimated thanks to genealogy information

Special: code = "EEE": cows BV evaluated in another country.

14. Origin of evaluation code for SCS:

For sires:

Code "IP1": Sires with an INTERBULL evaluation coming from MACE evaluation (Polygenic), considered publishable in their country, and having at least 45% INTERBULL reliability.

Code "IG1": Sires with an INTERBULL evaluation coming from GMACE evaluation (Genomic), considered publishable in their country, and having at least 45% INTERBULL reliability.

Code "DP1": Sires with a Walloon (Domestic) Polygenic proof and having at least 45% domestic reliability.

Code "DG1": Sires with a Walloon (Domestic) Genomic proof for which its genotype is available and having at least 45% domestic reliability.

Code "DG0": Sires with a Walloon (Domestic) Genomic proof for which its genotype is not available and having at least 45% domestic reliability.

Only proofs for sires born after January 1, 1985 are published that have also a production proof.

For cows:

First character = D: sire breeding value comes from **D**omestic evaluation

First character = I: sire breeding value comes from **INTERBULL** evaluation

First character = M: sire breeding value **M**odified by INTERBULL or foreign evaluation.

Second character = D: dam breeding value comes from **D**omestic evaluation

Second character = F: dam breeding value comes from **F**oreign evaluation

Second character = M: dam breeding value **M**odified by INTERBULL or Foreign evaluation.

Third character = 1: cow performance used in calcul **1**

Third character = N: cow has **N**o performance registered, her value is estimated thanks to genealogy information

Special: code = “EEE”: cows BV evaluated in another country.

15. First position of the blocs for the 33 different traits:

Trait N°	Trait (in French)	Trait (in English)	Position
1	Taille	Stature	330
2	Avant-main	Chest width	341
3	Profondeur corps	Body depth	352
4	Profondeur poitrine	Chest depth	363
5	Force du rein	Loin strength	374
6	Longueur bassin	Rump length	385
7	Inclinaison bassin	Rump angle	396
8	Largeur hanches	Hips width	407
9	Largeur bassin	Rump width	418
10	Angle du pied	Foot angle	429
11	Membre postérieur vue cote	Rear leg set	440
12	Qualité os	Bone quality	451
13	Membre postérieur vue arrière	Rear leg rear view	462
14	Equilibre avant arrière	Udder balance	473
15	Profondeur du pis	Udder depth	484
16	Ecart latéral trayon	Teat placement side	495
17	Ligament suspenseur	Udder support	506
18	Texture du pis	Udder texture	517
19	Attache avant	Fore udder	528
20	Placement trayons avant	Front teat placement	539
21	Longueur des trayons	Teat length	550
22	Hauteur attache arrière	Rear udder height	561
23	Largeur attache arrière	Rear udder width	572
24	Placement trayons arrière	Rear teat placement	583
25	Caractère laitier	Angularity	594
Composite traits			
26	Développement	Overall development	605
27	Bassin	Overall Rump	616
28	Membres et pieds	Overall feet and leg score	627
29	Pis	Overall udder score	638
30	Avant-pis	Overall fore udder	649
31	Arrière-pis	Overall rear udder	660
32	Caractère laitier synthétique	Overall dairy character	671
33	Note générale	Overall conformation score	682

16. Origin of evaluation code for conformation:

For sires:

Code "IP1" = proof for this trait comes from the INTERBULL Polygenic evaluation (MACE) and having at least 50% INTERBULL reliability for stature.

Code "IG1" = proof for this trait comes from the INTERBULL Genomic evaluation (GMACE) and having at least 50% INTERBULL reliability for stature

Code "DP1" = proof for this trait comes from the Domestic Polygenic evaluation, i.e., based only on Walloon phenotypic data and having at least 50% domestic reliability for stature.

Code "DG1" = proof for this trait comes from the Domestic Genomic evaluation, i.e., based only on Walloon genomic information (with bull's genotype available) and having at least 50% domestic reliability for stature.

Code "DG0" = proof for this trait comes from the Domestic Genomic evaluation, i.e., based only on Walloon genomic information (with bull's genotype NOT available) and having at least 50% domestic reliability for stature.

Code "PP1" = proof for this trait is predicted from INTERBULL Polygenic (MACE) results for other traits.

Code "PG1" = proof for this trait is predicted from INTERBULL Genomic (GMACE) results for other traits.

Code 'BM1" = proof for this trait is combined information from "***PP1***" or "***PG1***" with information from "***DP1***" or "***DG1***" ➔ Mixed information.

Only proofs for sires born after January 1, 1985 are published that have also a production proof.

For Cows (only first trait):

First character = D: sire breeding value comes from **D**omestic evaluation

First character = I: sire breeding value comes from **INTERBULL** evaluation

First character = M: sire breeding value **M**odified by INTERBULL or foreign evaluation.

Second character = D: dam breeding value comes from **D**omestic evaluation

Second character = M: dam breeding value **M**odified by INTERBULL or Foreign evaluation.

Third character = animal code if animal is classified in first lactation, code = "1"

else code = "N".

17. Origin of evaluation code for longevity:

For sires:

Code "IP1": Sires with an INTERBULL evaluation coming from MACE evaluation (Polygenic), considered publishable in their country, and having at least 30% INTERBULL reliability.

Code "IG1": Sires with an INTERBULL evaluation coming from GMACE evaluation (Genomic), considered publishable in their country, and having at least 30% INTERBULL reliability.

Code "DP1": Sires with a Walloon (Domestic) Polygenic proof and having at least 30% domestic reliability.

Code "DG1": Sires with a Walloon (Domestic) Genomic proof for which its genotype is available and having at least 30% domestic reliability.

Code "DG0": Sires with a Walloon (Domestic) Genomic proof for which its genotype is not available and having at least 30% domestic reliability.

Code "PM1": Sires whose proof for this trait is predicted from INTERBULL MACE (polygenic) or GMACE (genomic) results for other traits (➔ Mixed information) and having at least 30% mixed reliability.

Only proofs for sires born after January 1, 1985 are published that have also a production proof.

For cows:

First character = D: sire breeding value comes from **D**omestic evaluation

First character = I: sire breeding value comes from **INTERBULL** evaluation

First character = M: sire breeding value **M**odified by INTERBULL or foreign evaluation.

Second character = D: dam breeding value comes from **D**omestic evaluation

Second character = F: dam breeding value comes from **F**oreign evaluation

Second character = M: dam breeding value **M**odified by INTERBULL or Foreign evaluation.

Third character = 1: cow performance used in calcul **1**

Third character = N: cow has **N**o performance registered, her value is estimated thanks to genealogy information

Special: code = “EEE”: cows BV evaluated in another country.

18. Origin of evaluation code for female fertility:

For sires:

Code "IP1": Sires with an INTERBULL evaluation coming from MACE evaluation (Polygenic), considered publishable in their country, and having at least 30% INTERBULL reliability.

Code "IG1": Sires with an INTERBULL evaluation coming from GMACE evaluation (Genomic), considered publishable in their country, and having at least 30% INTERBULL reliability.

Code "DP1": Sires with a Walloon (Domestic) Polygenic proof and having at least 30% domestic reliability.

Code "DG1": Sires with a Walloon (Domestic) Genomic proof for which its genotype is available and having at least 30% domestic reliability.

Code "DG0": Sires with a Walloon (Domestic) Genomic proof for which its genotype is not available and having at least 30% domestic reliability.

Code "PM1": Sires whose proof for this trait is predicted from INTERBULL MACE (polygenic) or GMACE (genomic) results for other traits (➔ Mixed information) and having at least 30% mixed reliability.

Only proofs for sires born after January 1, 1985 are published that have also a production proof.

For cows:

First character = D: sire breeding value comes from **D**omestic evaluation

First character = I: sire breeding value comes from **INTERBULL** evaluation

First character = M: sire breeding value **M**odified by INTERBULL or foreign evaluation.

Second character = D: dam breeding value comes from **D**omestic evaluation

Second character = M: dam breeding value **M**odified by INTERBULL or Foreign evaluation.

Third character = 1: cow performance used in calcul **1**

Third character = N: cow has **N**o performance registered; her value is estimated thanks to genealogy information.

19. Origin of evaluation code for Body Condition Score (BCS):

For sires:

Code "IP1": Sires with an INTERBULL evaluation coming from MACE evaluation (Polygenic), considered publishable in their country, and having at least 30% INTERBULL reliability.

Code "IG1": Sires with an INTERBULL evaluation coming from GMACE evaluation (Genomic), considered publishable in their country, and having at least 30% INTERBULL reliability.

Code "DP1": Sires with a Walloon (Domestic) Polygenic proof and having at least 30% domestic reliability.

Code "DG1": Sires with a Walloon (Domestic) Genomic proof for which its genotype is available and having at least 30% domestic reliability.

Code "DG0": Sires with a Walloon (Domestic) Genomic proof for which its genotype is not available and having at least 30% domestic reliability.

Only proofs for sires born after January 1, 1985 are published that have also a production proof.

For cows:

First character = D: sire breeding value comes from **D**omestic evaluation

First character = I: sire breeding value comes from **INTERBULL** evaluation

First character = M: sire breeding value **M**odified by INTERBULL or foreign evaluation.

Second character = D: dam breeding value comes from **D**omestic evaluation

Second character = M: dam breeding value **M**odified by INTERBULL or Foreign evaluation.

Third character = 1: cow performance used in calcul **1**

Third character = N: cow has **N**o performance registered, her value is estimated thanks to genealogy information

20. Values in euros (€);

The sub-index are rounded **before** computing V€T or V€G.

$V€L = \text{round } (-0.060*BV_{MILK} + 3.62*BV_{FAT} + 4.00*BV_{PROT})$

$V€P = \text{round } [8.64*BV_{TRAIT19} + 14.19*BV_{TRAIT22} + 5.55*BV_{TRAIT17} + 14.19*BV_{TRAIT15} + 2.47*BV_{TRAIT20} - 11.11*BV_{TRAIT24} - 5.55*BV_{TRAIT21}]$

$V€C = \text{round } [-4.32*BV_{TRAIT26} + 7.88*BV_{TRAIT33} - 3.24*BV_{TRAIT29}]$

$V€M = \text{round } [-4.11*BV_{TRAIT11} + 2.06*BV_{TRAIT13} + 10.54*BV_{TRAIT12}\ 9.00*BV_{TRAIT28}]$

$V€F = \text{round } [(1.79 * (BV_{SCS} - 100)) + (1.79 * (BV_{\text{COMBINED LONGEVITY}} - 100) + (1.79 * (BV_{\text{COMBINED FEMALE FERTILITY (CFF)}} - 100) + (0.89 * (BV_{\text{DIRECT CALVING EASE (DCE)}} - 100) + (0.89 * (BV_{\text{MATERNAL CALVING EASE (MCE)}} - 100))]$

$V€T = V€P + V€M + V€C$

$V€G = V€L + V€T + V€F$

21. For sires breeding values and indexes, only proofs are published that have a reliability of at least 20%.

For cows breeding values and indexes, only proofs are published that have a reliability of at least 15% (except for type traits).

If not, the source of evaluation code = “NN1”.

22. Missing values are represented by 9s.

23. Missing values are represented by 9.99

24. Missing values are represented by 999.99

25. Missing values are represented by 999.999

26. Origin of evaluation code for Direct and Maternal Calving Ease:

For sires:

Code "IP1": Sires with an INTERBULL evaluation coming from MACE evaluation (Polygenic), considered publishable in their country, and having at least 30% INTERBULL reliability.

Code "IG1": Sires with an INTERBULL evaluation coming from GMACE evaluation (Genomic), considered publishable in their country, and having at least 30% INTERBULL reliability.

Code "DP1": Sires without an INTERBULL evaluation, but with a Walloon (Domestic) Polygenic proof and having at least 30% domestic reliability**.**

Code "DG1": Sires with a Walloon (Domestic) Genomic proof for which its genotype is available and having at least 30% domestic reliability.

Code "DG0": Sires with a Walloon (Domestic) Genomic proof for which its genotype is not available and having at least 30% domestic reliability.

Only proofs for sires born after January 1, 1985 are published that have also a production proof.

For cows:

First character = D: sire breeding value comes from **D**omestic evaluation

First character = I: sire breeding value comes from **INTERBULL** evaluation

First character = M: sire breeding value **M**odified by INTERBULL or foreign evaluation.

Second character = D: dam breeding value comes from **D**omestic evaluation

Second character = M: dam breeding value **M**odified by INTERBULL or Foreign evaluation.

Third character = 1: cow performance used in calcul **1**

Third character = N: cow has **N**o performance registered, her value is estimated thanks to genealogy information