

Overview of ongoing projects at Qualitas AG

Adrien Butty for the geneticists team

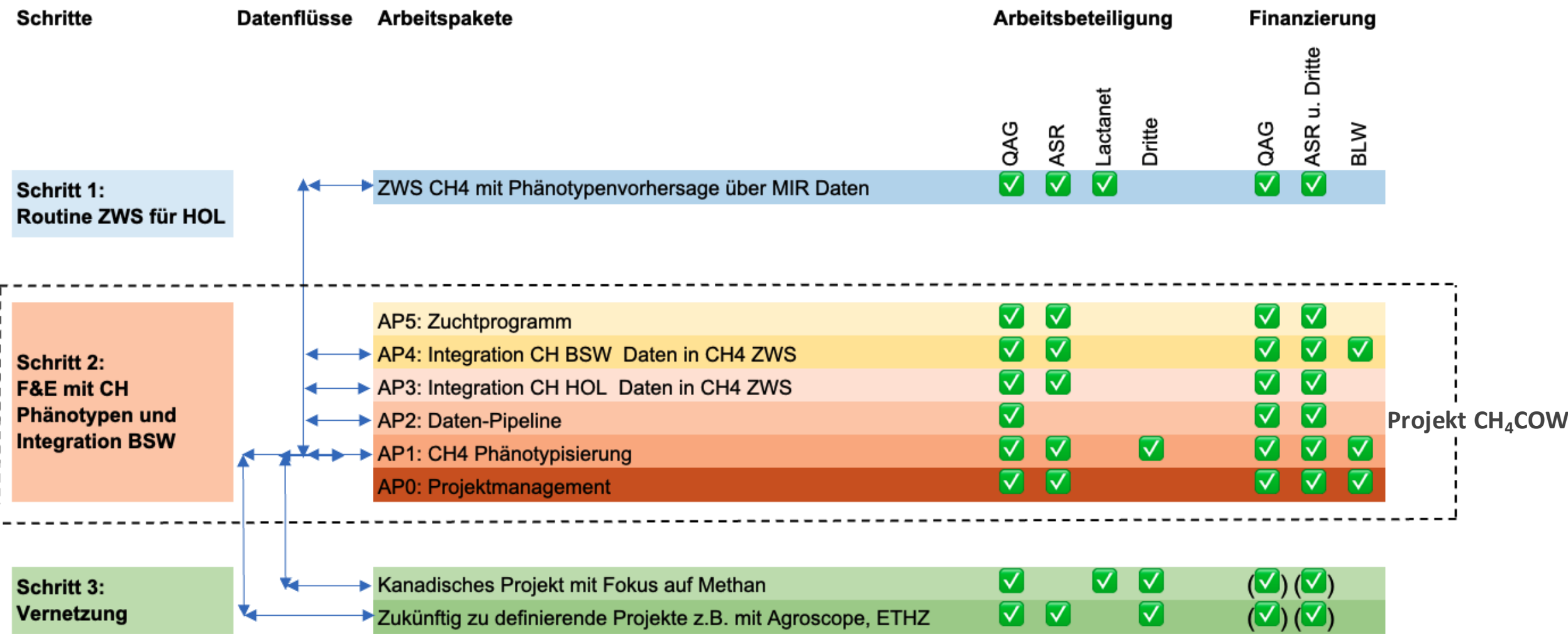
Some current projects at Qualitas

- Methane projects
- Development of single-step genomic evaluation
- New and extended breeding values estimation pipelines for beef breeds

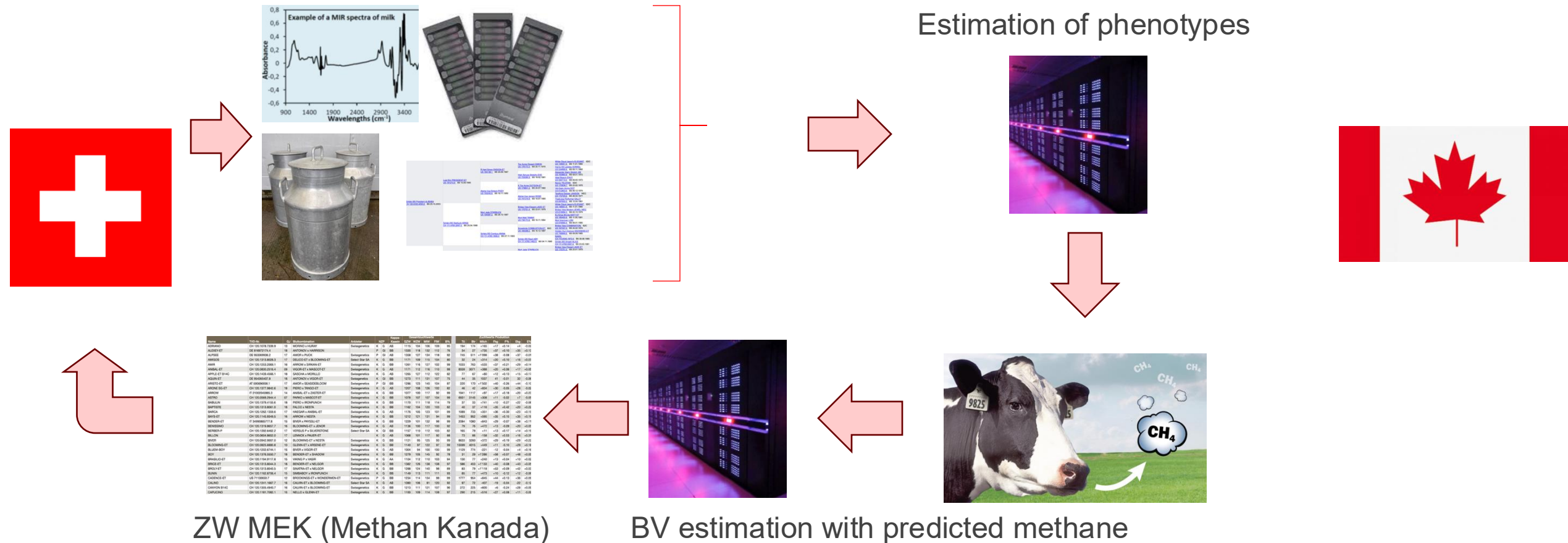
Methane Projects

- **Aim** to establish a routine BV estimation for reduced methane relying on Swiss methane data
- **Involved** Beat Bapst, Patrick Stratz, Adrien Butty and the ASR
- This follows the methane strategy of the ASR, which is laid over three steps:

Methanstrategie Rindviehzucht Schweiz (ASR)

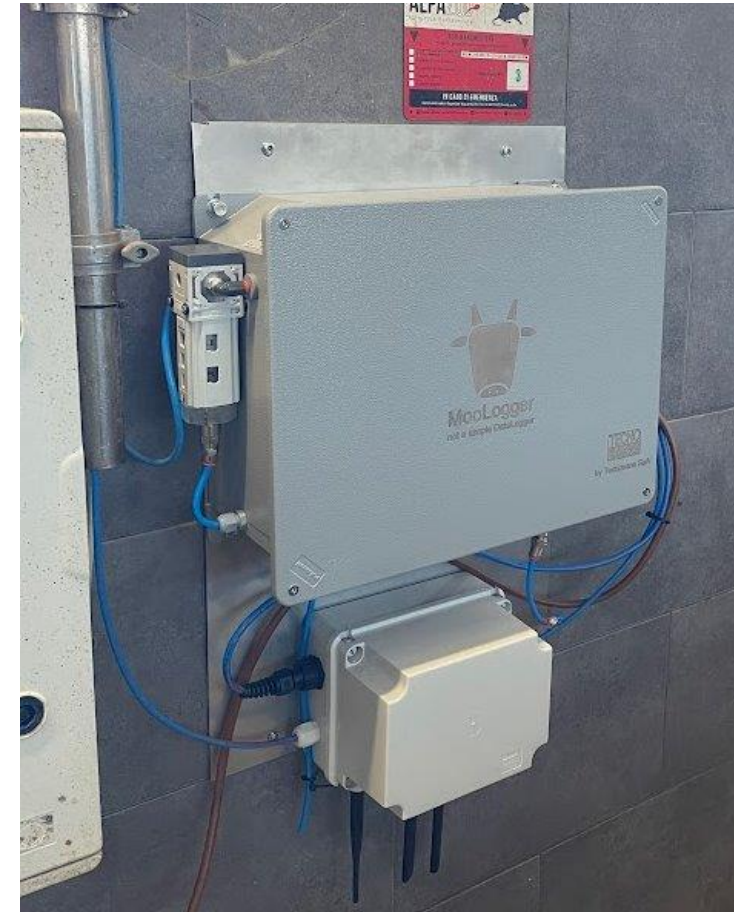


EBV for reduced methane from Canada

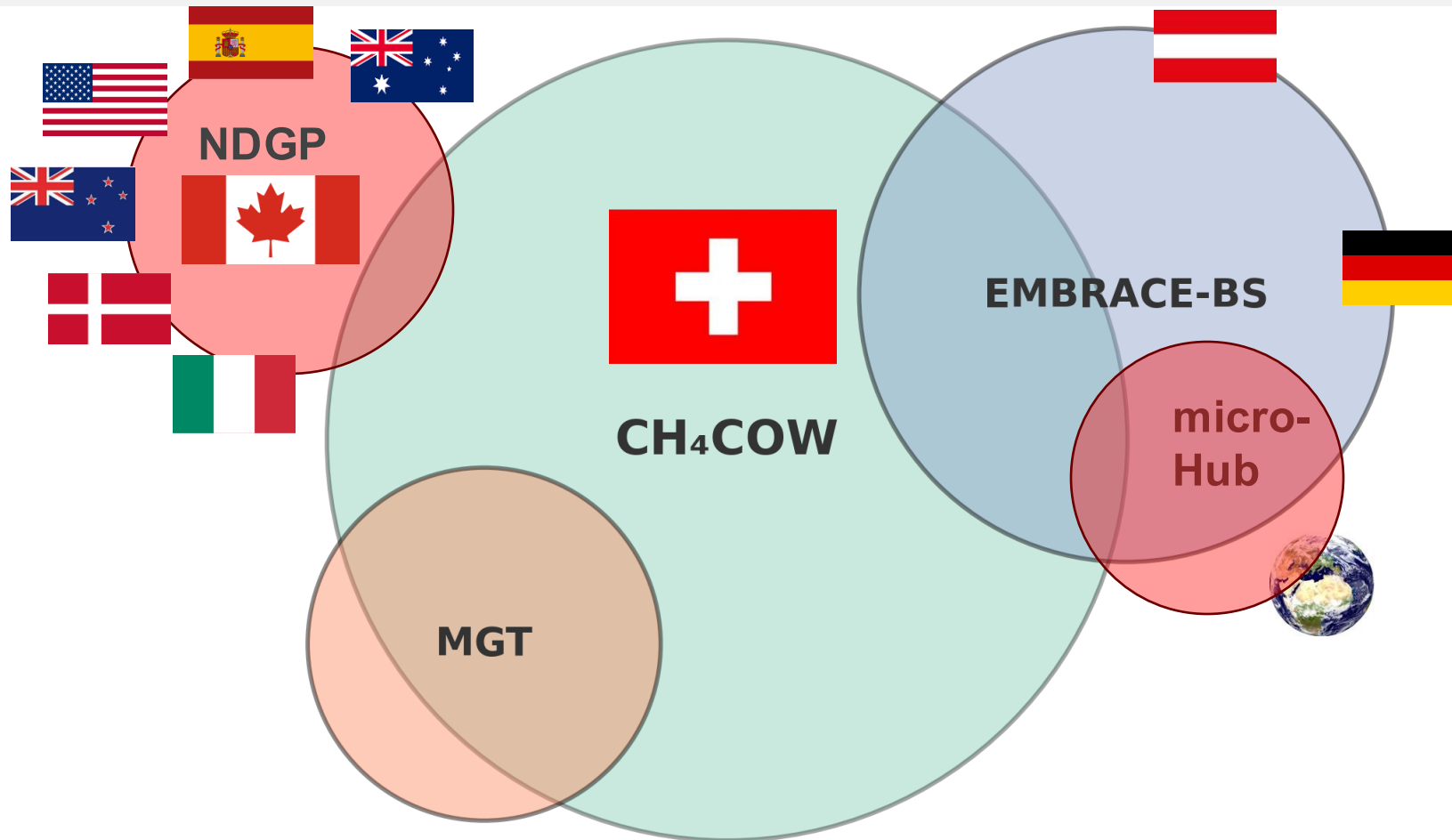


Project CH₄COW

- Sniffers installed on 64 commercial farms
- Automatic data transfer from sniffers to Qualitas
- Monitoring of sniffers stand via cloud-based database
- First data quality checks done
- Next step:
 - Merge sniffer and animal data
 - Descriptive stats on phenotype



Overview of the methane projects



Development of single-step genomic evaluation

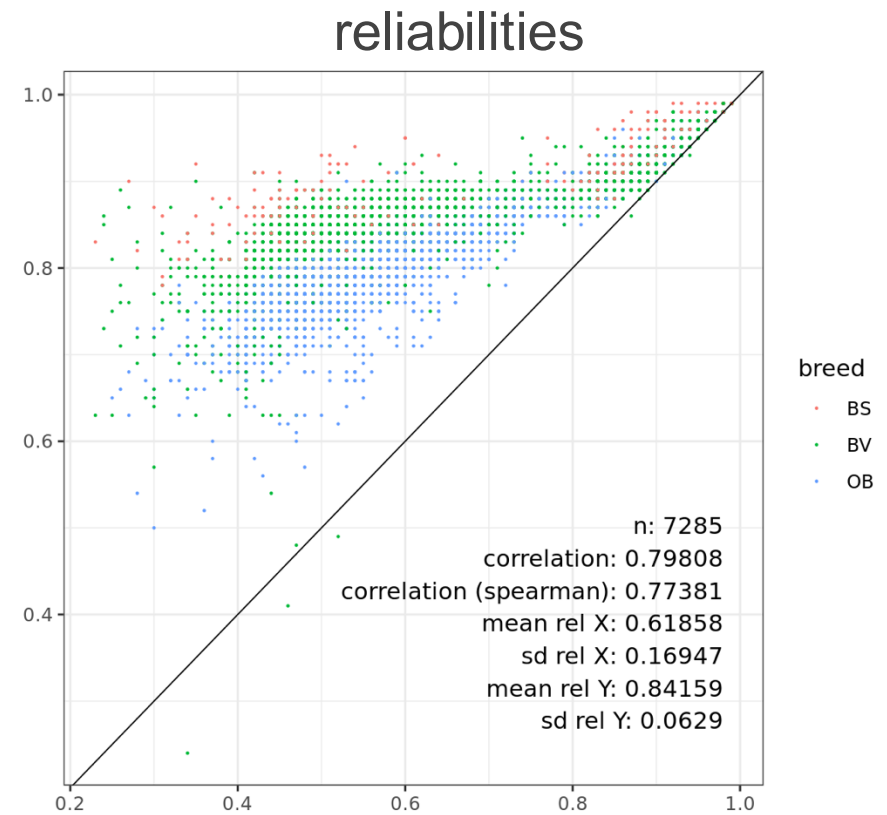
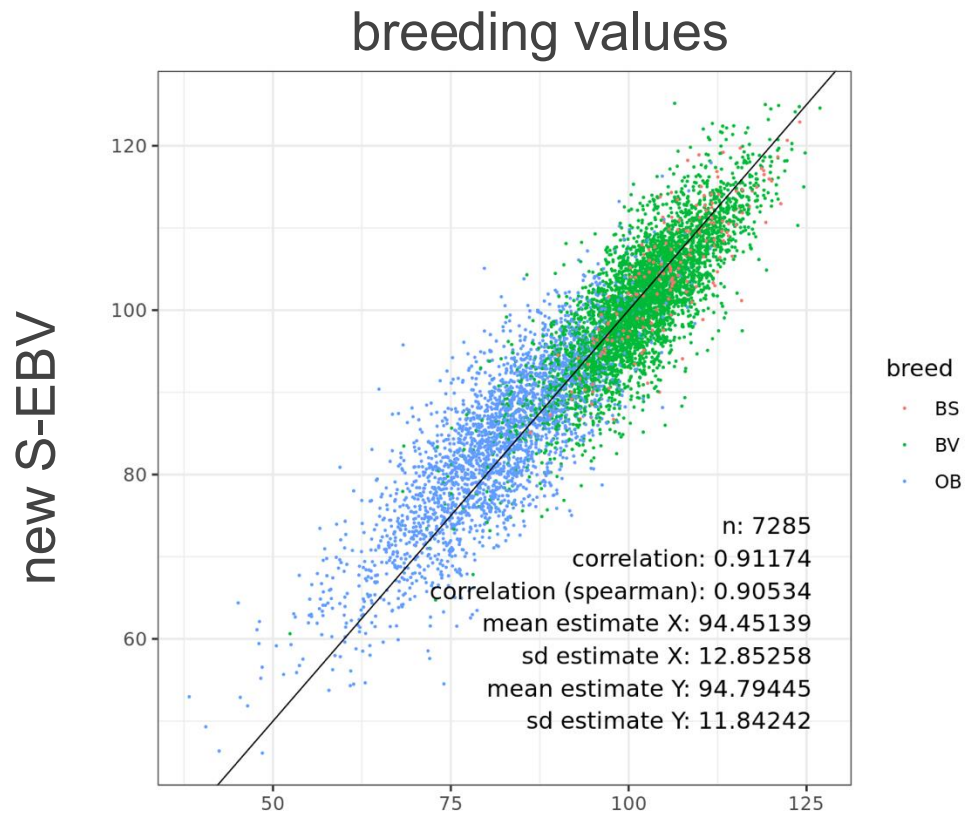
- **Aim** to replace the current multi-step genomic evaluation for all breed-trait combinations
- **Involved** Madeleine Berweger, Adrien Butty, Hadi Esfandyari, Urs Schnyder, Mirjam Spengeler, Patrick Stratz, Peter von Rohr, Sarah Widmer
- In 2025: implementation of S-EBV for production and conformation traits for BSW
- In 2026: implementation of S-EBV for fertility and mastitis resistance for BSW as well as calving traits for BSW and HOL

Other changes within single-step project

- Direct integration of international information into the BV estimation
- Change from sire-maternal-grand-sire model to animal model for calving traits
- Adaptation of farm coding to national animal movement database (TVD, BDTA)
- Re-estimation of genetic parameters and addition of a new trait – age at first insemination – to the fertility BV estimation model
- Change of the EBV model for longevity – still in progress

Comparison current and S-EBV

direct calving ease – BSW



current multi-step GEBV

New and extended breeding value estimation pipeline for beef breeds

- **Aim** EBV for as many beef breeds as possible within the carcass, weaning, conformation and calving traits pipelines
- **Involved** Sophie Kunz, Madeleine Berweger, Peter von Rohr
- Current pipeline with main breed stay the same
- Parallel pipelines with additional breeds and data edits
- New pipeline for conformation traits for all breeds with phenotypes

➔ **We will estimate EBV for over 30 VMS breeds**

EBV for more breeds and more traits

Traits	Already published	First publication planned for April 2026
Calving beef on beef traits	AN, AU, OB, CH, LM, SI	AL, BD, BZ, DA, DR, EV, GA, GC, HH, HI, HR, HW, LC, LG, MA, MW, RG, SH, SL, SK, PA, PI, PS, PZ, TL, TX, VS, WA, WB, ZE*
Calving beef on dairy traits	AN, OB, LM, SI	AL, AU, BD, CH, DA, DR, EV, GA, GC, HH, HI, HR, HW, LA, LC, LG, MA, RG, SH, SL, SK, PA, PI, PS, PZ, TL, TX, VS, VP, WA, ZE
Weaning traits	AN, AU, OB, CH, LM, SI	AL, BD, BZ, DR, EV, GA, GC, HH, HI, HR, HW, LC, LG, RG, SH, SK, SL, PA, PI, PS, PZ, TX, VS, WA, ZE*
Carcass calves	AN, OB, LM, SI	AL, AU, BD, BZ, CH, DR, EV, GC, HH, HI, HR, HW, GA, LC, LG, RG, SK, SL, PA, PI, PS, PZ, TL, TX, VS, WA, ZE
Carcass Natura-Beef traits	AN, OB, LM, SI	AL, AU, CH, BD, BZ, DR, EV, HH, HI, HR, HW, GA, GC, LC, LG, RG, SL, SH, SK, PA, PI, PS, PZ, TX, VS, WA, WB, ZE
Carcass ox, heifers, bulls	AN, AU, OB, CH, LM, SI	AL, BD, BZ, DA, DR, EV, GA, GC, HH, HI, HR, HW, LC, LG, PA, PI, PS, PZ, RG, SK, SL, TL, TX, WA, WB, ZE
Conformation	-	AL, AN, AU, BD, CH, DR, GA, HH, HI, LG, LM, OB, PI, RG, SH, SI, SL, TX

* Only direct traits

VMS Breed names

AL	Grauvieh	GV	Gelbvieh	PS	Pustertaler Sprinzen
AN	Angus	HH	Hereford	PZ	Pinzgauer
AU	Aubrac	HI	Highland	RG	Rätisches Grauvieh
BD	Blonde d'Aquitaine	HR	Hérens	SH	Shorthorn
BV	Braunvieh	HW	Hinterwälder	SM/SI	Simmental
BZ	Bazadaise	LC	Lowline Cattle	SK	Speckle Park
CA	Chianina	LG	Luing	SL	Salers
CH	Charolais	LM	Limousin	TL	Texas Longhorn
DA	Dahomey	MA	Maine Anjou	TX	Tux-Zillertaler
DR	Dexter	MG	Murray Grey	VS	Vosges
EV	Evolène	MW	Murnau-Werdenfelser	WA	Wagyu
GA	Galloway	PA	Parthenaise	WB	Welsh Black
GC	Gasconne	PI	Piemontese	ZE	Zebu

New EBV for conformation traits

- Started with work from a previous internship
- Trait list reduced to common traits to all breeds for now
- Variance component estimation with major EBV breeds (AN, LM, SI, CH)

	Bone strength	Foreleg position	Hock angle	Pasterns	Claws
Gliederstärke	0.33	-0.18	0.14	0.20	0.38
Stellung vorne		0.21	-0.25	-0.25	0.15
Sprunggelenkwinkelung			0.27	0.64	-0.36
Fesseln				0.28	-0.35
Klauen					0.08

Diag: heritability estimates, off-diag: genetic correlations

Other projects in short

- Change of technology from Affimetrix to Illumina for our genotyping array
- Project SwissCow 2.0
- Implementation of Beef on Dairy index
- Integration of the database of Holstein Switzerland into ours
- Follow up of students at the Uni Bern
 - e.g. presentation of Stefan Vasiljevic



Qualitas⁺

