

# Connecting on-farm systems to improve management and genetic level of the herd

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## Abstract

CRV is a Dutch Flemish co-operative that aims to improve the herd management of farms worldwide by improving the genetic level of the herd and by supporting the farmers with their management decisions. The genetic level of the herd can be elevated by supplying semen of high quality bulls that fit the production system of the farmer best. In addition, the farmer can be supported in selecting his elite females for breeding and subsequently by advising the best sire to breed these females with. Herd management is supported by information products and services like AI, ET, pregnancy checking, herdbook registration and milk recording. CRV has innovated the way data is collected by making a direct connection to the on-farm systems the farmer uses. Using this connection, data is exchanged in two ways between the farmer and CRV. Examples of those on-farm systems are DeLaval, GEA, Lely, Fullwood, SAC, Boumatic, SCR and NEDAP. Examples of exchanged data are, among others, milk yield, calving date, insemination date (DIY and AI technician), pregnancy diagnosis, dry-off date, activity data, animal movements, fat and protein calibration data. CRV wants to extend this list with data such as animal weight, conductivity, other health diagnoses and treatments, feeding, etc. The data is used in the CRV management system (called VeeManager, which translates to herd manager) which the farmer can consult (e.g. in the fertility management solution Ovalert, heat attentions from on farm systems are combined with other fertility data and sire advice). Moreover, the same data is used to estimate novel breeding values, like robot suitability, or to improve reliability of existing breeding values. On-farm systems use the CRV data to improve their cow specific management (e.g. insemination and pregnancy check data to reliably calculate calving date and dry-off date, which is used to increase milking time interval before drying off ) or to calibrate the sensors (e.g. fat and protein results from CRV are used to calibrate Lely and Fullwood fat and protein sensors). Most important, the farmers are very happy with the exchange of data as they are not asked to enter data more than once and they experience the advantages of the data exchange. CRV has faced (and still is facing) many challenges when developing these connections. The interfaces vary from supplier to supplier, some are very modern, but many are very old (up to 25+ years). The lack of standardisation is causing a lot of extra effort to realise this development and slows down the speed of innovation. To remove this bottleneck, CRV has initiated, together with nutritionist coop Agrifirm and dairy coop FrieslandCampina, a foundation named Smart Dairy Farming. This foundation governs a datahub that connects the on-farm systems to anybody who the farmer has authorised. The datahub has no database, but is a central point where data can be exchanged. In a pilot project (2012-2014) the SDF datahub has been developed and tested on seven dairy herds in the North of Holland. We are now preparing the system for market introduction. The aim of this is to enhance the use of precision dairy farming and create a win-win-win situation for the farmer, hardware/sensor suppliers and software/algorithm suppliers.

*Keywords:* data, exchange, standardisation, CRV, herd management, datahub, Smart Dairy Farming