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Subject	Abstract presented manuscript as POSTER presentation	Exchanges of French genetic data are driven by farmer consent managed in a dedicated blockchain

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ABSTRACT

FGE manages French collective system for the genetic improvement of ruminants and offers services to its members with shared genetic information systems. The information system for cattle genetic improvement manages 200 million of animal (+7.5 million per year) and more than 1 billion of information (+40 million per year), coming from 44 000 farms, recorded and used by more than 300 companies (135 with a very significant activity).

FGE launched in 2020 the deployment of a new professional national data base, connected with a dedicated data exchange platform and a breeder's consents verification platform "Agata Consent" to validate and secure the exchange based on a consortium blockchain solution. The system, in production for the first users, ensures the informed consent of breeders speaking about the use of their data by several professional organizations for research & development, genetic improvement or innovation, without any intervention from the user. It works as a trusted third party to exchange data even with multiple addressing, with addressing parameters supported by web services. It increases the confident of breeders and organizations in the exchanges and the uses of data all along the value chain, in adequation with the European Data Act regulation.

To focus on Agata Consent, it has a distributed architecture with a variable number of nodes (coherent with blockchain philosophy) and ensure the security of the system by pseudonymization. If a specific organization obtained a consent of the farmer for a category of data (also called "data family"), it can use the data in accordance with the usage established in the consent. Moreover, the organization will have an easy access to the data using the tools developed. The system can also be used by a company outside the genetic improvement sector. Indeed, the Consent Management System is generically designed to be able to manage consents relating to data from all sectors of agri-food value chains and even other sectors of economy. It is organized into functional areas called "domains" within which data concerned and rules for managing consents are defined. This organization, which is both modular and generic, makes it possible to offer the service to a wide range of customers, while preserving specificities of each. A portal has also been



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developed on which the farmer is able to consult and modify (if allowed in his contracts) the delegations and the consents he gave.

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