TRACEABILITY OF THE HIDES IN THE TANNING PROCESS

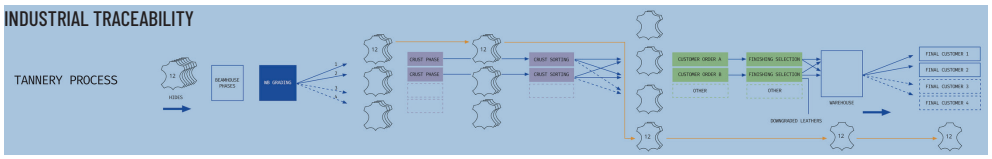
Authors

Cesare Dal Monte
GER Elettronica srl
Via dell'Artigianato 26
36075 Montecchio Maggiore (Italy)
E: c.dalmonte@gerelettronica.com
T: +39 0444 709 5555

Twan de Bie
Vitelco Leather
Aaltenseweg 4
7131 Lichtenvoorde (Netherlands)
E: t.de.bie@vitelcoleather.com
T: +31 620 53 64 81

INTRODUCTION

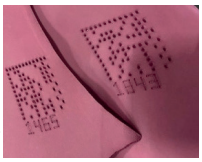
The knowledge of the processes is the essential condition for reducing the environmental impact. To know, it is necessary to accurately trace every single phase by verifying: the initial conditions, the final results, and the consequent environmental impact that the phase entails.
The goal of this project is to develop a single leather traceability system within the tanning process.



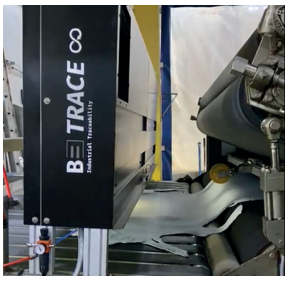
DESIGN STRATEGY

In the tannery process the hide flow starts in raw, usually identified by a batch code, along the process the initial group of the hide is separated in depending of the sorting stage in Wet Blue, in Crust and in Finish Leather. By using the Technology of the project, we can follow each single hide along the process, connecting the data for the final customer to incoming data of the animal to guarantee the complete traceability.

MATERIAL AND METHODS



The project consists in 2 different modules.
1.A LASER SYSTEM marks each hide with a Dot-Matrix code in raw stage. The protocol of the code allows to recognize the data of the original animal of the skin.
2.An ARTIFICIAL VISION SYSTEM combined with software with artificial intelligence algorithms that identifies the code marked on the skin, even if this is deformed by the processing.
The project is applied on a samming line in wet blue stage.



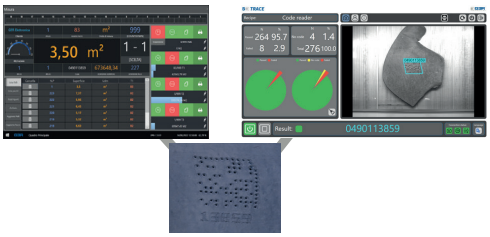
The system installed at the exit of the press in the wet blue phase.



The mark recognized by the system.

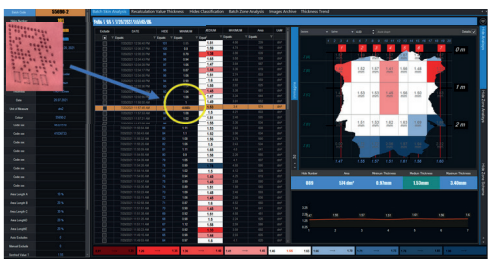


The laser mark.



RESULTS

The evaluation of the influence that mechanical and chemical processes has on each single hide allows to hypothesize stage feedback without having to wait for the end of the process itself.
Applying the traceability system in combination with a measuring system for the surface it is possible to determine the area of the single hide putting in relation, for example, the weight of the animal with the real yield of the skin.



CONCLUSIONS

The project opens up a wide panorama of possible uses converting the Traceability rules for ethical aspect in a Industrial Traceability System.
The combination of the Industrial Traceability Systems with a 3D Scanning Systems use in the process, determine the knowledge of the influence that stages and recipes make on the hide.Recording the data will be possible to analyse this specific influence to set correct parameter of the process for saving resources and respecting the environment.