kyema
The swiss RFID solution

Protection of the quality and authenticity of wine

The problem of counterfeit products and the growth of parallel markets are increasing constantly, and spreading to an ever greater number of products. The impact on companies is considerable, given the loss of both image and profits. Competition in the wine industry is ever more focused on **quality products**, since consumers are becoming more knowledgeable. Therefore complete control over the wine-making process becomes ever more decisive, initially to guarantee a high level of quality in production, and subsequently to have control over the authenticity of the product throughout the distribution chain, in order to guarantee that the original product reaches the consumer and beats the counterfeit products that are now so widely available. According to certain official data, for example, 36% of Italian food products available in the United States are counterfeit, and this rises to 50% for wine. One in every two bottles is a fake. With **RFID technology** integrated into processes of production, logistics and distribution, it is possible to control the quality of the **wine-making process** and guarantee the customer gets an authentic product.

Control over the wine-making process, from producer to consumer
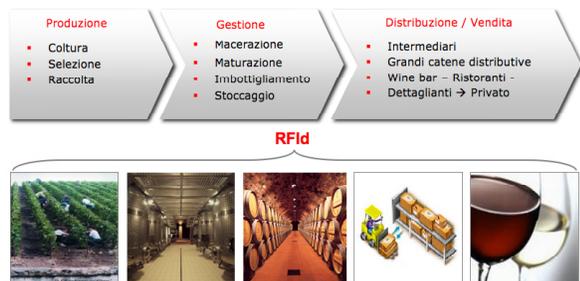
The special SIVA platform of GreenPlanet, integrated with Kyema's RFID technology, provides a complete system for management, control and tracing of wine-making processes, from the vine, through maturation, to the barrel-aging process, logistics and finally the bottle.

The RFID technology applied varies according to different requirements and the different contexts in which it is to be used.

Control over the wine-making process begins at the vine. By integrating data from a meteorological station with maintenance work carried out on the vine and registered on a RFID tag, located by the vine, it is possible to trace the entire cultivation process of the vine, correlating it with the meteorological data. The grape harvest is traced using the collection crates, from which it is possible to connect the grapes with the vines from which they were harvested. Thus it is then possible to control the wine's maceration and maturation in barrels or casks, **automatically gathering and registering** all data relevant to production control. Finally, during the bottling process, you apply labels provided by the RFID transponder, so using **RFID technology** again it is possible to trace the entire **logistics process** from storage to distribution. Some of the technological systems described are already in common use among prestigious American and Australian producers, and in the United States the FDA is moving towards compulsory application of these technological practices to guarantee authenticity and traceability of the finished wine.

GEN_PRO.Verify – Guarantee a product's authenticity

The consumer, the point of sale, the restaurant or even the distributor can all verify the authenticity of a product using a hand-held computer or a simple **mobile phone with NFC - Near Field Communication**, the new function found on the next generation of mobile phones, which is fully compatible and operable with RFID technology.

An RFID tag is applied to the bottle of wine, with a code that is unique worldwide, as guaranteed by microchip producers. This can be read using a NFC mobile phone, handheld computer or totem placed at the points of acquisition.

By holding a NFC mobile phone close to the bottle, or the bottle close to the totem at the point of sale, the consumer can read the RFID tag containing the unique code which certifies the authenticity of the bottle, wine or producer.

Cellulare NFC
Palmare RFId

Totem RFId

Tag RFId
sotto l'etichetta

The consumer is satisfied with the purchase since **the authenticity of the product is guaranteed**.

The Eximia solution can be applied to a vast range of products and goods such as food and agricultural products or clothing, simply by adapting the same identification methods used for the bottles of wine to other products.

GEN_PRO.Loyalty

Thanks to the confidence and cooperative relationship built up between producer, point of sale and client, it is possible to establish a relationship of mutual satisfaction and customer loyalty. The basic tool is still the NFC mobile phone, which allows the client to identify him/herself and to exchange information and receive services linked to the product, the producer or even the point of sale:

- Receive information on promotions, events, new products, special offers.
- Make use of the NFC mobile phone as a method of payment (prepaid card or credit card).
- Manage a loyalty programme.

GEN_PRO.Loyalty is built on the **ARMADILLO** platform from Eximia (see ARMADILLO brochure).
The RFID GEN_PRO.Loyalty application can be enhanced significantly in terms of information and relationships through the integration of mobility services on NFC mobile phones with the web.
Through interaction between producer and consumer developed over time, it is possible to establish a direct, solid relationship that can be maintained thanks to the intrinsic two-way nature of the network, with newsletters, feedback, targeted promotions etc.

NFC (Near Field Communication)

Near Field Communication is an RFID technology developed for mobile phones by Philips (NXP), Nokia, Sony, Samsung and others. The mobile phone essentially contains an RFID reader capable of reading data stored in other tags (or other phones) and of interacting with these at an application level. It also contains an integrated RFID tag with the mobile phone's settings and the user's SIM.

NFC technology applications can be applied to micropayments, identification of objects, peer to peer applications and mobile commerce.

Logistics management

In order to apply RFID solutions even more effectively it is important to control the product's logistics and distribution processes too. **RFID technology** can be applied not only to individual products but also to packaging and transport.
In this way it is possible to control and manage the internal **logistics process** within the production site and to trace the various steps of the product and packaging, identifying any possible discrepancies or deficiencies in the process early on.

Production   Consumption
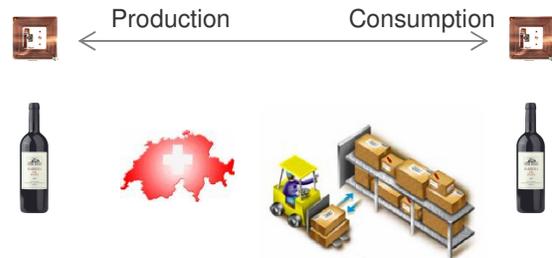
EPC

EPC (Electronic Product Code) represents a coding 'family' for the RFID tags. The plan for the EPC system is to use it as an unequivocal way of identifying products worldwide, and managing their traceability through production, distribution and sale.
EPC applies to the tags, the middleware component and the interfaces for software communication between services. EPC (Gen2) reaches standard ISO 180006c.
The EPC tags are standard and recognised throughout the world.

Kyema: the Swiss RFID solution

Kyema is a solution provider specialising in Radio Frequency Identification technology (RFID).
Kyema is the main player in Switzerland and, in combination with its partners, it is a leader at European level, having supplied turnkey RFID solutions that are both transactional and use contactless cards and Real Time Location systems.

Our experience is unique throughout a wide variety of applications and sectors. Kyema is able to respond to clients' specific needs, supplying:

- *Advice on system architecture and integration with company systems and processes.*
- *Specific definition, selection and installation of hardware, software and middleware components.*
- *Production engineering and personalising of solutions according to clients' needs.*