

## CASE STUDY:

# An RFID-Based Management Solution for Biobanks

### THE CLIENT

The Paoli Calmettes Institute's Cell Therapy Facility and Tumor Cell Bank are two highly respected facilities shared by patients, physicians and scientists alike. It's one of France's most prestigious hospital research laboratories and Europe's largest cancer research institute. The research conducted there requires timely, precise and efficient management of human pathology samples, processed and stored in an extremely harsh environment. This case study represents the first time that an RFID system was deployed within a medical lab where the items were stored in refrigerators and liquid nitrogen tanks.

### THE CHALLENGE

Since barcode labels cannot withstand storage in liquid nitrogen over any length of time, vials have been historically been identified using color code caps or ink markers. Unfortunately, markings would wear off and foam on the tubes which made the caps and markings difficult to read. In addition, lab staff used manual, paper files to migrate the data from the samples to the database.

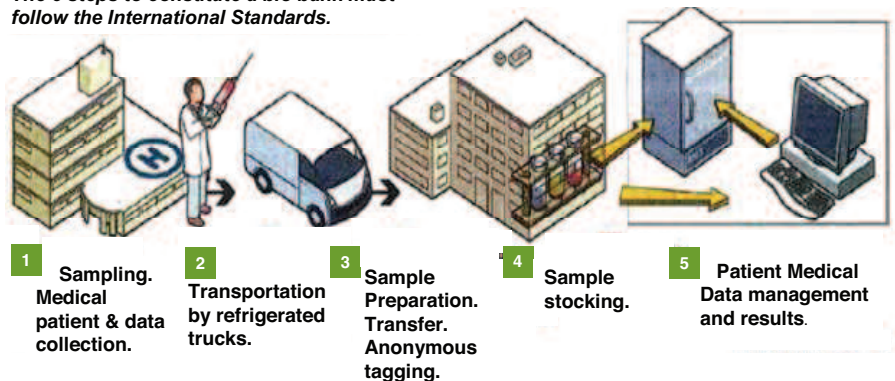
The system in place led to:

- Unidentified or misidentified human tissue samples
- Time consuming data management
- Higher risk from human errors

TAGSYS develops comprehensive multi-band RFID infrastructure for item-level tracking. This universal infrastructure includes purpose-built readers and tags, as well as RFID management software, all designed to work together seamlessly, at the highest performance levels, in the most demanding environments. With a proven track record of delivering reliable production systems, TAGSYS has deployed over 100 million tags and 60,000 reader systems to over 500 customers in more than 40 countries. More information on TAGSYS can be found at [www.TAGSYSRFID.com](http://www.TAGSYSRFID.com).

### A real need for « end-to-end » traceability

*The 5 steps to constitute a bio bank must follow the International Standards.*



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**THE PROJECT TEAM**

Paoli Calmettes Institute asked TAGSYS to provide a complete identification solution for their bio bank based on TAGSYS' track record in customizing RFID technology for complex environments where liquid and extreme temperatures are involved.

**THE SOLUTION**

The solution includes 2 major components:

- A very small SDM (Small Disk Module) RFID tag containing data corresponding to the tissue sample is embedded into the vial cap. This tag is able to sustain temperatures as low as -320°F, and when removed from the liquid nitrogen tank, it withstands the precipitous swing up to +257°F that occurs in a matter of just a few seconds.
- An RFID reader is connected to a PC, enabling lab employees to rapidly identify the "tagged" samples and manage the vital information they contain. A multi-read function in the RFID chip and reader allows for the identification of a specific sample on a tray of multiple vials.

**THE RESULT**

Over 70,000 tubes containing human pathology samples are equipped with RFID tags and the solution is integrated into the lab's bio bank. As a result, the institute achieved:

- Accurate and secure identification of the human pathology samples
- The RFID Chip memory allows the management of a great deal more data per vial
- Rapid and accurate identification of specific samples
- Fast and reliable data management
- Improved quality and timeliness of treatment development
- More frequent and regular monitoring of pathology samples

**FUTURE DEVELOPMENT**

The institute is considering implementing TAGSYS' RFID systems for the traceability of bags containing liquids such as blood and IVs.

**CONCLUSION**

"Our adoption of RFID technology is a groundbreaking move within the life sciences industry as the enhanced identification capabilities over traditional bar code technologies becomes apparent. In deploying the most progressive identification solution on the market, TAGSYS enables us to seamlessly manage our test specimens in a safe and accurate manner to eliminate inefficiencies while increasing overall availability and reliability of our test data," said Dr. Christian Chabannon, head of the Paoli-Calmettes Cell Therapy Facility.

