

Access security for mobile microbiology lab

Case study



IMeBIO - Mobile biosafety labs



Jean-François JUNG
DIRECTOR
IMeBIO



We needed an access solution suited to difficult environments in order to secure our labs and implement a number of auxiliary yet crucial functions.»

STid was selected as an innovative manufacturer by IMeBIO for its multifunctional access control solution for end-to-end security.

MeBIO was founded in December 2008. It designs, develops, manufactures and sells innovative mobile labs, in particular BSL2 and BSL3 biosafety labs designed for all sectors needing to study and analyze pathogens, whether associated with health risks, pandemics or bioterrorism. Security therefore needs to be optimal. These confined spaces need to be quick to set up, anywhere in the world, especially in countries where virulent strains can appear. Users therefore need to be able to manage a mobile laboratory independently, remaining in control of security settings.

Issue



MeBIO has to implement access control, not just for the end-to-end security of its mobile microbiology labs, but also in order to protect community health by limiting infection risks.

Users need independent security management at all times, anywhere in the world. They need to be able to respond instantly to all critical situations in order to avoid health disasters.

As well as the question of security, IMeBIO needs many applications to be integrated within the access reader, such as a key information display, in order to reduce the amount of equipment to be used and the cost of the solution.

“The implementation of a multifunctional reader enables us to add auxiliary functions on a single device, simplifying daily operations for lab staff facing multiple uses and optimizing costs,” explains Jean-François Jung.

Solution

► Secure and reliable identification



The STid solution with its Architect® touch-screen RFID readers, SSCP communication protocol and silicone wristbands was selected to secure the mobile labs.

“Each mobile laboratory needs around ten readers to secure access to these sensitive areas and protect the community from infection risks,” Jean-François Jung.



The 13.56 MHz MIFARE® Architect® reader with display offers the best data security systems, using recognized public security algorithms that comply with the recommendations of the French Network and Information Security Agency (ANSSI).

- ▶ Open, non-secret protocol
- ▶ Cryptography using public algorithms
- ▶ Reader authentication (session keys)
- ▶ Signature, encryption
- ▶ User keys management
- ▶ Selection of communication method and security level (plain text, signed, encrypted, signed and encrypted).

In order to guarantee end-to-end authentication, the STid SSCP communication protocol has been integrated into Architect® readers to ensure security between the reader and management system. This protocol encrypts data (AES) and provides mutual "reader-controller" authentication prior to any communication.



▶ Multiple functions in one reader



The solution developed is much more than an RFID reader for identifying authorized personnel. The touch screen provides two key functions:

- **Display:** checks whether safety conditions have been complied with by displaying the pressure levels in the airlocks and laboratories, and checks for open doors. It can also display the company logo to promote brand image.

- **Touch screen:** a button can be added to the screen to act as a doorbell or door release button. It can also display a keypad used for authentication or for activating auxiliary functions such as alarms.

“ We chose the Architect® reader as it offers all key functions we required. We quickly and easily integrated them into our system,”
Jean-François Jung.

IMeBIO also selected the RFID Architect® touch-screen reader for its indicator lights and audio signals that manage user information in real time. The buzzer acts as an alarm if a door has been open for more than 10 seconds, alerting staff to a possible security breach.

“ Reading indicators are essential for the security of our mobile labs as they give instant diagnostics,”
Jean-François Jung, Director of IMeBIO.

Multicolored LEDs also give users visual information, notifying them of access authorization, an open door or a decontamination operation that is underway, etc.

▶ Independence and control

The STid SSCP solution uses tried-and-tested and approved public security algorithms. This open software is compatible with all access control systems. STid uses tools that enables them to manage mobile lab security independently. IMeBIO needs to be able to respond quickly for emergency action in difficult situations. The company is not dependent on STid to upgrade its system and security settings in response to real-time needs.

“ It is essential to have an open solution that is easy to install so that it can be implemented in any corner of the globe, whether the laboratory is connected to the mains supply or an independent power generator, in tropical regions such as the Amazon rainforest or Cameroon, or in dryer places such as Mali”, Jean-François Jung.

Results

By choosing the STid access solution, IMeBIO ensures staff and community protection without compromising on correct mobile lab security procedures, throughout the world.



Architect® readers and the SSCP communication protocol offer the highest levels of security and provide numerous possibilities for integrating auxiliary functions, such as a key information display, buttons, keypads, and indicator lights and audio signals, etc. The RS485 serial link can be used to easily connect the reader to any type of machine.

“The STid solution helps us secure our laboratories and protect human lives, while offering other benefits. The multifunctional readers considerably reduce integration, cabling and installation costs and save space. We have halved the number of machines we use and saved on 140 cables per laboratory,” Jean-François Jung, Director of IMeBIO.

Finally, doing away with mechanical keys has reduced the replacement costs by a factor of 100. If a badge is lost, it can be cancelled in real time and a new one sent out.

“Implementing an access solution to secure mobile laboratories needs to address the issues of security, multiple applications and technological openness. This kind of solution needs to adapt to any type of environment and constraint in order to ensure security for all. Thanks to IMeBIO, we are able to make a small contribution to the fight against infection disease. It is also interesting to see our readers used in extremely difficult regions such as Amazonia, Mali or Cameroon,” concludes Vincent Dupart, STid CEO.



STid presentation

Designer of RFID solutions for asset security and supervision

STid is one of the leading developers of contactless identification solutions using RFID, NFC and Bluetooth® Smart technologies and the Internet of Things (IoT). For over 20 years, we have been inventing smart solutions designed to secure access and provide traceability for assets in testing environments such as the aeronautical, energy or defense sectors.

We give companies, industries and governments the means of identifying, protecting and supervising their assets, making their daily operations easier and safer. Our range of à la carte services and customized support contribute to our clients' success in their industrial security and traceability projects.