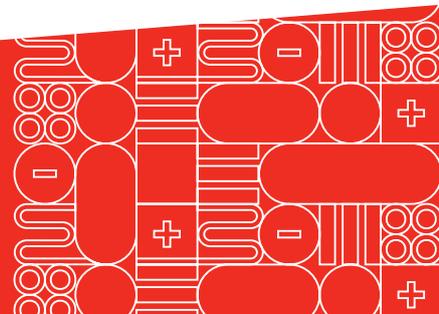




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Case Study: Eliko UWB technology empowers entertainment

Industry	Entertainment
Company	Puy du Fou theme park
Location	Les Epesses, France
Key challenges	Tracking actors in small rooms Non-line-of sight conditions
Solution	Replacing active RFID with the Eliko UWB RTLS
Results	Accurate tracking of actors to sense the exact location of an actor on stage, activate microphones, sound-, and lighting effects, at the precise moment required.





Puy du Fou, twice voted the World's Best Theme Park, chose Eliko's Ultra-Wideband locating technology to enable production of "Le Premier Royaume," its newest immersive show.

Since 1978, France's Puy du Fou theme park has dramatized history through live historical tales on a massive scale. Its innovative experience for theatre goers has been called "the eighth art" – an immersive combination of cinema and live theatre.

Ranked number one in Europe and number two worldwide on Trip Advisor, the theme park receives over two million visitors per year, second in France only to Disney. It has been voted World's Best Park by its industry peers on two occasions, as well as its last creations took honours for Best Technical Innovations at the Park World Excellence Awards 2020 in London.

Tech to keep pace with imagination

In 2019, Puy du Fou launched its newest immersive show, "Le Premier Royaume" ("The First Kingdom"), a dreamlike, fantastic experience that follows Clovis, King of the Franks, through 14 worlds. The show cycles continually for seven hours per day, utilizing 14 sets that occupy 2,200 square meters of space.

Five hundred theatre goers move through the sets, as 8 actors execute perfectly timed entrances and exits, supported by lights, sound, and special effects. But the production, despite its 13-million euro budget, was initially challenged to find a technology that could keep pace with the imagination of its creators.





RFID Limitations

Puy du Fou relied on technology in its productions to sense the exact location of an actor and activate microphones, as well as sound- and lighting effects, at the precise moment required. "In the beginning we used RFID technology, but it was problematic," says Martin de Gaillard, who is in charge of automation and IT for "Le Premier Royaume."

The measurements generated by the RFID technology were only approximate. "Sometimes they were totally wrong," says de Gaillard. "The system would say the actor was one meter from the microphone and then it would say five meters. The distance caused delays, and the public might notice a long lag, an actor's lips moving but not producing sound."

Microphones also were required to be "smart" and know when an actor is present. "Sometimes the microphone would come on when the actor entered the stage, but the lag required delaying the shut-off. That could mean the actor exited the stage and the public heard something said offstage that they're not supposed to hear."

De Gaillard and his team soon reached the limits of active RFID technology. They addressed the problem by tweaking the software, but they were not satisfied. "The RFID simply gave us wrong measurements, and we wanted the best when it comes to accuracy and flexibility."



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Martin de Gaillard

IT and Automation Manager for Shows
at Puy du Fou





Works like the manual says

This was not Puy du Fou's first immersive production — it had four others — and the use of cameras had proved a solution to RFID inaccuracies. But De Gaillard knew the small rooms used in "La Premier Royaume" would make camera use complicated. He considered Bluetooth, too, but it was also too imprecise. So he began a search, finally concluding that an ultra-wideband real-time locating system (UWB RTLS) was the solution.

Ultra-Wideband is a new-generation radio technology that is currently the most precise technology for establishing locations indoors.

"Eliko's system was easy to understand," says De Gaillard. "Autonomy is very important to us, and with Eliko things worked exactly like the manual said they would. It's easy to put an anchor on the map and find the actor."

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"Yes, there are other solutions out there," he says, "but we felt they might take too much time and money to adopt and test, which meant extra risk for us. We wanted to move forward fast."





Full automation without delay

Six months into the production of "La Premier Royaume," De Gaillard's team replaced the RFID technology with UWB RTLS. It meant that actors were now placed within a few centimetres of their actual locations. And UWB RTLS also worked in non-line-of-sight conditions, the signal easily penetrating wood and concrete used in set construction.

The technology worked so well that "La Premier Royaume" production does not require a technician present during the show. "The technician comes in the morning and turns on the system," says De Gaillard, "and then it works automatically."

But there was one lag in production that no technology could solve, and that was the park's closure caused by the pandemic. But on June 10, 2021, the park reopened, something Martin de Gaillard and his team had waited a long time for.

Since their system is capable of 3D tracking, they will soon put that feature to use. They plan to put UWB technology to

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use in all their immersive shows, plus on their standard stages, as well, where it can better trigger light, video, sound, and special effects. "UWB offers many possibilities for entertainment," says De Gaillard. "Knowing an actor's precise location means everything is triggered at the right time. It's easier for the actors because they can focus on acting and not technology."

About Eliko

Eliko is a pioneering UWB indoor positioning network provider. Eliko empowers innovators on their journey to develop mission-critical digital solutions in many industries worldwide, including entertainment. Eliko's UWB networks are highly flexible and scalable in order to suit multiple indoor location opportunities and address new relevant use scenarios. In addition to Le Puy du Fou Theme Park in France, its customers include The Curtis R. Priem Experimental Media and Performing Arts Center in New York, M9 Museum in Italy, and many others.

Contact us at sales@eliko.ee to discuss your tracking needs.