Brussels, 10 September 2018

A first for 3 Belgian towns:

Belfius launches a mobility platform using blockchain technology for schools and local authorities via its innovation lab, The Studio

This digital platform will enable the pupils at the municipal schools in Bonheiden, Peer and Crisnée to collect 'digital currency' each time they walk or cycle to school. This 'currency' can then be used at the fair, in the swimming pool or with local partners. The 3 localities plan to use this unique reward system to encourage children to contribute in a practical way towards better mobility and improved air quality in the area around their school. The platform is a joint-creation from The Studio, the innovative lab at Belfius, and the Belgian IT company, Flow Pilots, which builds digital solutions for the governments of the future. The system uses blockchain technology, which guarantees the privacy and integrity of the data. A dashboard enables the schools and local authorities to see how many kilometres the children have covered and the quantity of CO_2 emissions avoided as a result. The launch of this digital application is part of the Mobility segment of the Smart Belgium strategy implemented by Belfius.

Awareness campaigns designed to encourage children to walk or cycle to school are usually targeted at parents. But Belfius and the 3 towns and municipalities that have already signed up to the scheme, have opted to take a different approach: their initial aim is to give schoolchildren a form of motivation so that they can persuade their parents to leave the car at home.

From local 'ducats' to 'digital currency'

A few months ago, the town of Bonheiden won the Belfius Smart City Award with a campaign in which children were encouraged with physical 'ducats' to walk or cycle to school. The campaign was a great success: 500 of the 800 schoolchildren in infant and primary classes registered for the project and the number of pupils cycling or walking to school rose from 12% to 62%. In the space of a year, more than 146,000 kilometres of driving and almost 30 tons of CO_2 emissions were avoided. The number of accidents close to schools also fell dramatically. And to jump aboard the digital train totally, Bonheiden also wanted to convert the 'ducats' into a 'digital currency' based on blockchain technology.

Belfius immediately believed in the project and asked its innovation lab, The Studio, and the Belgian IT company, Flow Pilots, to join forces and develop a digital service which goes live this month in 3 pilot towns: Bonheiden, Peer and Crisnée. Belfius firmly believes that the application can help local authorities to improve mobility in their district, while at the same time making the areas around schools safer and healthier. Many other towns and municipalities have already shown considerable interest in this smart – and user-friendly – solution.

How does it work?

- ✓ When they register, the children receive a **sensor** (RFID[1] tag or badge) that they can fit to their bike or hang from their school satchel.
- ✓ At school there is an RFID **scanner** that automatically detects when a child rides into the bicycle storage area or arrives at school on foot. The children receive points for this, which can be converted immediately into 'ducats'. An **algorithm** calculates the number of points earned per journey made by bike or on foot. This involves calculating the distance from home to school, the kind of weather on the day and what season it is. Bonus points can also be earned, for example by wearing a helmet.
- ✓ Local partners can join the system and offer the ability to **pay for purchases with virtual ducats. As a result, the project also supports the local economy.**

Fully 'mobile' and designed for kids

Participating children, schools and merchants will soon be able to access the platform. Pupils can use the app to view their points balance and the distances covered. Their parents can also immediately see how much fuel they have saved thanks to their children's efforts. A dashboard shows municipalities and schools a summary of the number of participants, the savings of CO_2, the number of kilometres not travelled by car and so on. Partner merchants then use the app's cash register module to convert the virtual ducats to euro in a single click.

Many primary schoolchildren don't have their own smartphone yet and so cannot use the app. As an alternative, they are given a physical card that enables them to use their ducats at the fair, swimming pool, etc.

Blockchain-based

The foundation of this project consists of a private blockchain[2], in other words a network of duplicated databases. Using blockchain technology offers a range of benefits:

- By sharing the data and process **each town does not have to set up its own system**. The application can be tailored to each town or municipality, while the underlying platform is shared.
- The technology enables the **confidentiality/privacy of the data** to be controlled, while the **integrity of the data is guaranteed**. For example, one town can decide that the ducats earned in its school classes can be spent in another municipality, without having to share data.
- The scalability of the technology makes it possible to connect other players to the shared data and process in the future. This creates the base for an **ecosystem into which other applications can be built in the future.**

Collaboration between the various parties involved

Developing this digital reward system required in-depth knowledge in a variety of areas, which resulted in close collaboration between Belfius and The Studio and a range of Belgian IT companies. Project leader, Flow Pilots, developed the platform and apps for towns, schools and merchants. It was also responsible for integrating the readers and tags. IntellectEU and The Studio worked on developing the blockchain segment. IntellectEU is acknowledged worldwide for its blockchain expertise. The technology of fintech player Twikey ensured there was seamless integration between the blockchain and existing payment systems.

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[1] RFID: radio frequency identification
[2] Only members of the consortium are able to view and download the database, unlike the bitcoin blockchain which is freely accessible to everyone.

During the months ahead, The Studio and Flow Pilots aim to market the concept in Flanders and Wallonia, joining forces with other players in the area of bicycle and mobility policy.

Blockchain will play an increasing important role in the public sector of tomorrow

The launch of this digital mobility solution fits in well with the Smart Belgium strategy implemented by Belfius. The aim is to help build a sustainable society in Belgium by tackling societal challenges in 8 key areas (education, energy, mobility, circular economy, smart city services, etc.), using technology and innovation as the catalyst.

The Studio and Belfius foresee an important role for blockchain in the public sector. In fact, the core tasks of government, such as registering identity, issuing certified documents and raising taxes, could well undergo a fundamental revamp using this technology.

Working via The Studio, Belfius aims to play a key role in providing a reliable blockchain infrastructure in conjunction with government and IT centres.

About Flow Pilots
Flow Pilots believes that the intelligent use of digital technologies is an important driver in the success of modern organisations. The company develops innovative digital products and services in-house or on behalf of large companies. As the innovation hub for the Cipal Schaubroeck group, Flow Pilots is also closely involved in smart solutions for governments and the public sector. Based on this broad view of the market and its technological expertise, the company carefully designs, builds, distributes and maintains the digital tools that help make their customers successful.

About IntellectEU
IntellectEU is a fintech that specialises in Distributed Ledger Technology (DLT). The company provides services to central banks, insurance companies and other financial institutions. IntellectEU is a founding member of the Linux Foundation's Hyperledger platform and has partnerships with leading players in the industry, such as SWIFT, IBM, Oracle, R3 and Digital Asset.
Catalyst, IntellectEU's star product, is a new-generation integration platform that connects blockchain technology with existing systems. IntellectEU operates worldwide and has offices in New York, Brussels, Lisbon, Coimbra, Munich, Mexico and Kiev.

About Twikey
Twikey provides innovative solutions for simplifying payment processes for doing business digitally and for making omnichannel easily accessible. As a result, periodic payments can be made in a way that is more transparent, less expensive and more customer-friendly. Twikey is a successful Fintech scale-up, established in 2013, and has partnerships with most of the leading banks.

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