Innovative cable car for urban transport

Results in Brief

The future of urban mobility looks up to the sky

The mobility of people, goods and information has always been an essential part of growth and progress in society. The EU-funded CABLESMART project aims to revolutionise the urban public transport sector by proposing an innovative system which combines the strengths of a cable car and wheel-based systems.
As the world’s cities grow, so too does the need for greener and more efficient urban public transport systems. This demand is made more acute by traffic and the growing need to protect the environment and reduce energy consumption and transport and congestion costs while at the same time ensuring an adequate quality of life for those who live in the city.

Demand for a better way to travel

To satisfy these demands, the CABLESMART project, coordinated by Italian company Dimensione Ingenierie Srl, is developing CableSmart, the first system which combines the strengths of a cableway with those of a wheel-based system for a complete urban transport network. Sergio Blengini, company president, points out: “There are obvious limitations for traditional urban mobility.” Current modes of transport – railways, subways, tramways and buses – are costly to build and exploit. They also produce high levels of pollution and consume a lot of energy. “Presently, cableways, while they have a lower impact on urban fabric, are not reliable, provide limited personal safety and comfortability, and are costly to operate and maintain,” he adds.

A closer look at CableSmart
“CableSmart overcomes limits of traditional cableway systems and responds to the growing urban mobility needs,” Blengini comments. Combining both traditional cable car and self-propelled vehicles, it is capable of accessing steeper areas and tighter curves.

With a capacity to transport 5,000 passengers every hour, with up to 10 people in each cabin, and moving 6 m per second, it can extend over 10 km. “Passengers will travel in comfortable, air conditioned, illuminated reliable vehicles and will be able to choose their destination thanks to smart technology,” Blengini emphasises.

Blengini also highlights that the cabins will be “equipped with electric motorisation, storage and charging energy devices, and communication and automation systems.” Additionally, they will “autonomously manage the launch and landing and move on both straight and curved beams.” Stations and cabins will also accommodate those with reduced mobility.

Safety matters

CABLESMART’s responsiveness to new urban transport specifications and compliance with ropeways standards ensure a high level of safety is met. Cabins and stations are equipped with video surveillance and safety communication systems. With the help of artificial intelligence, cabins are able to communicate with each other and with the system to report any anomalies.

There are electrical safety and control devices on the rollers, “the loss of one roller won’t compromise operation. Durability of the soft elements are much greater than traditional ones”, Blengini outlines. CableSmart is wind-proof and incorporates a traffic flow management system, a failure management system and a maintenance management system for added safety. The CABLESMART system is completely failure-proof.

Helping the environment and economy

CableSmart is a sustainable and green solution based on smart, energy-efficient cabins. When compared with other transport systems, there is a 70% reduction in energy consumption, 50% of which is self-produced by integrated solar panels. “It is a competitive solution with a low construction cost of approximately EUR 5-10 million for every km. At a cost of 30 cents a km for each passenger, this means a payback period of around 6 years.”

In 2021, CableSmart is to be launched. It is expected that after 5 years of exploitation, 11 CableSmart units will be sold. This means revenues and gross profits of approximately EUR 135 million and EUR 33 million respectively.
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