Press Release

At 550 Gigabit per second on long-distance data transmission, TIM strikes a new European record

The new record achieved on TIM's Rome - Florence backbone network

Rome, 29 May 2019

TIM, in collaboration with Nokia, has achieved a wavelength speed of 550 Gigabits per second (Gb/s), a new European record for data transmission over a long-distance backbone network. The trial covered more than 350 kilometres on TIM's operational network between Rome and Florence using the new Nokia Photonic Service Engine 3 (Nokia PSE-3).

In addition to this milestone, TIM and Nokia also reached a transmission rate of 400 Gigabit/s over 900 kilometers between Rome and Milan, and 300 Gb/s over 1,750 kilometers.

The PSE-3 is the first coherent DSP to implement a sophisticated signal processing algorithm known as Probabilistic Constellation Shaping (PCS), which maximizes data transport capacity over any distance. This speed triples the bandwidth of the current network, and with the arrival of 5G, will offer customers the most efficiency and connectivity in support of the ever-increasing ultrabroadband traffic, as well as ensuring reliability and security.

TIM's backbone is a Wavelength Division Multiplexing (WDM) network based on the latest generation of Nokia's 1830 Photonic Service Switch. The network is fully automated and currently carries optical signals with a capacity of 100 Gb/s over distances of up to 1,800 kilometers, and 200 Gb/s up to 800 kilometers. The backbone, with a coverage of over 16,000 kilometers of fiber, and connecting to 65 national POPs (Point of Presence), has carried over 9,000 petabytes of data traffic in the last year, equivalent to the content of 2 billion DVDs.

Elisabetta Romano, Chief Technology & Innovation Officer at TIM, said: "We are proud of this European record which confirms TIM's technological leadership, the high quality of our network, our commitment to develop innovative solutions in order to guarantee the best experience to our customers. Today's result, which triples transmission speed compared to the current one, confirms that TIM's network is the most advanced infrastructure capable of offering new digital services and platforms, also with a view to developing 5G."

Sam Bucci, Head of Optical Networking at Nokia, said: "We are proud of the partnership we have built with TIM over the years, and of the opportunity to demonstrate the capability of our PCS technology on their most important transport infrastructure."

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