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New Record Set in Ultra Fast Data Transmission

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By [Henry Lancaster](#)



Scientists led by a team at Karlsruhe Institute of Technology (KIT) have broken a record for data transmission, sending data at 26Tb/s on a single laser beam over 50km. To put this into context, the researchers suggest that this is the equivalent of transferring the contents of 700 DVDs per second, or the entire collection of the Library of Congress in ten seconds.

Last year the same team of researchers succeeded in transferring 10Tb/s. The method involves opto-electric decoding by which high data rates are broken down to smaller bit rates that can be processed and decoded (from over 300 separate colours of light). The initial encoding of data uses orthogonal frequency division multiplexing (OFDM), a similar process used in mobile communications networks. OFDM uses a number of lasers to encode different strings of data; by contrast the earlier fibre technologies encoded a string of data within a single spectrum of light.

For telecoms networks the development is significant, and since the physical limits of the process have not yet been reached higher rates still are inevitable. Whereas there was no demand for such high transfer rates a few years ago this has given way to a greater need now, given the logarithmic growth of Internet traffic, and in a few short years the need may become urgent. Currently communication networks provide data rates of 100Gb/s while engineers are developing commercial systems capable of 400Gb/s to 1Tb/s.

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