

OIF Hot Topic Fact Sheet – Flex Ethernet



About OIF's Flex Ethernet (FlexE) project: FlexE is a technology for extending standard Ethernet PHYs to add support for bonding, sub-rating and channelization and also provides support for management channels and time synchronization. The FlexE 2.1 Implementation Agreement supports homogeneous collections of 50GbE, 100GbE, 200GbE and 400GbE PHYs. A common application is data-center interconnect over advanced coherent links. The FlexE framing mechanism is used as the basis for Recommendation ITU-T G.8312, Interfaces for the metro transport network. As IEEE 802.3 continues to develop standards for beyond 400 Gb/s Ethernet, it is anticipated that FlexE will be extended to operate over groups of greater than 400 Gb/s Ethernet PHYs.

FlexE 2.2

This is a maintenance release under development to incorporate the updates and corrections reflected in the FlexE 2.1 implementation guide.

Why is the FlexE project important for the market? Modern Ethernet networks can benefit from a richer set of features than the base Ethernet technology provides. Support for network slicing in 5G networks, smoothly interfacing to variable-rate long-haul optics, and the ability to bond together multiple Ethernet PHYs to make a connections that look like Ethernet, but run at unique rates, are all features that FlexE provides.

Relevance to (or in association with) other industry organization activities: IEEE 802.3 provides the base Ethernet specs.

Date of OIF project start: January 2015

Status of project: FlexE recently completed its first minor revision of its second major release.

Demo/showcase highlights: OIF's FlexE work was demonstrated as part of the [OIF 2019 Physical and Link Layer Interoperability Demo at OFC 2019](#). Realistic multi-vendor deployment scenarios, client rate reconfiguration, and in-band messaging features were demonstrated on a network built from a variety of Ethernet optics and interconnecting the OIF and Ethernet Alliance booths.

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More information: <https://www.oiforum.com/technical-work/hot-topics/flex-ethernet-flexe-2/>

Recent project update PPT presentations: [NGON 2019](#) – May 21, 2019

Recent articles about FlexE*:

Lightwave: <https://www.lightwaveonline.com/optical-tech/article/16667789/oif-ethernet-alliance-pair-on-flexe-demonstration-at-ofc-2019?eid=383971651&bid=2392146>

Lightwave: <https://www.lightwaveonline.com/optical-tech/article/16675970/oif-begins-flexe-21-project-holds-leadership-elections>

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