

What is FAPI all about?

5G PHY API is the latest in a series of common interfaces which Small Cell Forum has defined to underpin an open small cell architecture and ecosystem, and the first in a family of 5G APIs.

Open APIs at every level – chip, network and application - are central to the vision that, in the 5G era, mobile platforms will be interoperable, and low barriers to entry will encourage broad innovation and competition.

SCF has been engaged in driving these open platforms throughout its history, and has seen several of its interfaces adopted by standards bodies like 3GPP and open initiatives like ORAN Alliance and Open Air Interface.

The first 5G FAPI release is 5G FAPI: PHY API. This is an extension of the original 3G and LTE FAPI PHY API specifications, which are incorporated in most small cell chips today. The PHY API specs define internal interfaces between the two chip-level network layers, the PHY and the MAC (medium access control). The former converts packets to bits for transmission over the radio channel, while the MAC supports functions such as the scheduling and any required retransmission of these packets.

These open interfaces allow for interoperability between the PHY and the MAC – in 3G, 4G and now 5G – in a small cell design, and they have secured backing from a wide range of influential companies, including both Intel and Qualcomm, as they address a current gap in 3GPP standards.

They enable a level of openness that has been near-impossible in the macro RAN so far, allowing deployers to mix and match elements from different suppliers to achieve the optimal solution for their particular needs, and to introduce significant price competition into the ecosystem.

Small Cell Forum believes that the 5G FAPI family, which will roll out over the coming year, will play an important role in bringing to cellular the open economics and scalability that are seen in markets where open PHY/MAC interfaces prevail, notably Ethernet.

In turn, that will help to lower the cost and time to market for small cell designers, and enable the scale economics which will be essential to enable 5G requirements for affordable densification and ubiquitous coverage.

In subsequent releases, SCF will address other 5G FAPI interfaces, including those to support a split MAC and PHY in a disaggregated small cell network; plus releases addressing the Front End and Network Monitor user cases.

If you would like further information about SCF membership, please contact:

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