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For comment to: -

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We would like to bring to your attention the results of our discussion of a proposal to modify the definition of OTSi in Recommendation G.959.1 that came from ITU Sector members some of whom are also active in CCAMP. This proposal was not accepted. However, the meeting did agree to add

some text to clarify this point in the draft of G.807 that entered the approval process at the end of the current SG15 meeting.

The proposed modification was based on work in CCAMP on draft-ietf-ccamp-optical-impairment-topology-yang-01 which includes the following text:

> "**2.3.1. Optical Tributary Signal (OTSi)**
>
> The OTSi is defined in ITU-T Recommendation G.959.1, section 3.2.4 [G.959.1]. The YANG model defined below assumes that a single OTSi consists of a single modulated optical carrier. This single modulated optical carrier conveys digital information."

The meeting agreed to retain the definition of OTSi in the current version of version of G.959.1:

> **"3.2.2 optical tributary signal (OTSi)**: Optical signal that is placed within a network media channel for transport across the optical network. This may consist of a single modulated optical carrier or a group of modulated optical carriers or subcarriers."

The current definition of network media channel is:

> **"3.2.5 network media channel**: A network media channel is the serial concatenation of all media channels between an OTSi modulator and an OTSi demodulator. The network media channel may exist without an active OTSi.
>
> NOTE – A network media channel supports a single unidirectional OTSi and an OTSi is supported by a single network media channel."

The following text is from clause 7.1.2 of draft new Recommendation G.807 that entered the approval process at this meeting.

7.1.2 Media channel

The media channel is a topological construct that represents both the path through the media and the resource (frequency slot) that it occupies. A media channel is bounded by its ports. A media channel may be a serial concatenation of multiple media channels, each with its own frequency slot. This concatenation may include the media channels within media constructs or fibres. A media channel that cannot be decomposed into a concatenation of other media channels is known as an atomic media channel. Figure 7-1 below provides some examples of the serial concatenation of media channels to form a longer media channel.

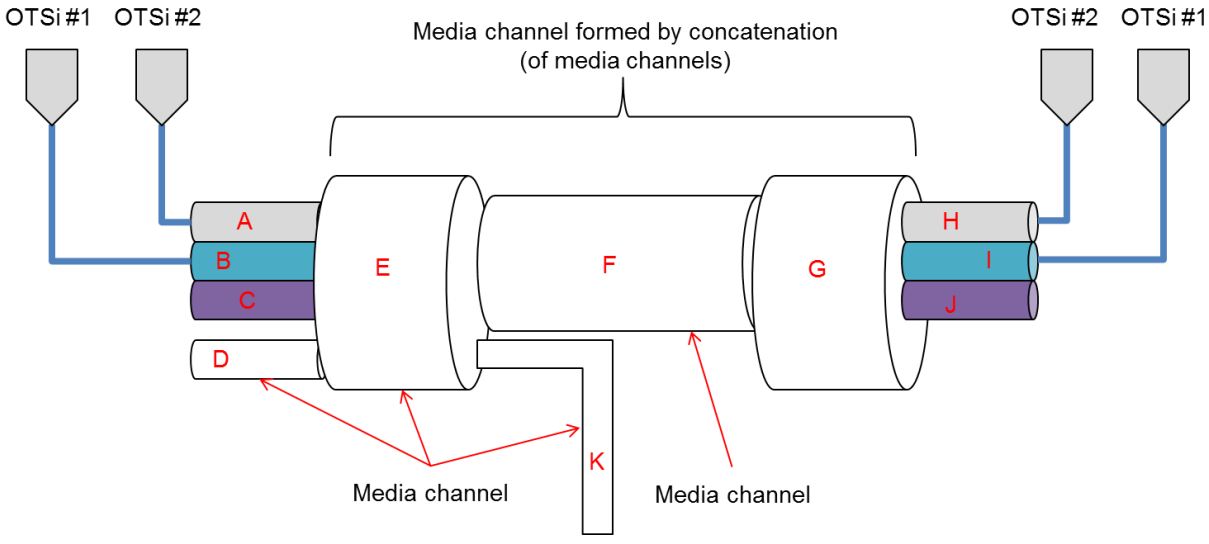

Figure 7-1 – Media channel concatenation

For example, in Figure 7-1 a media channel is formed by the concatenation of media channels C+E+F+G+J. A media channel has no internal structure, i.e., the examples of "narrower" and "wider" media channels illustrated in Figure 7-1 simply reflect their respective "narrower" and "wider" effective frequency slots, and should not be interpreted as illustrating a containment relationship of the media channels[1]. No hierarchy is created in either the media channels or the signals carried.

The size of a media channel is specified by its effective frequency slot, which is described by its nominal central frequency and its slot width [ITU-T G.694.1]. The effective frequency slot of a media channel is that part of the frequency slots of the filters along the media channel that is common to all of the filters' frequency slots. The parameters "n" and "m" as defined in [ITU-T G.694.1], are used to describe the effective frequency slot with the exception that n and m (for cases where the n value of the constituent filters' frequency slots are not all the same) may have a granularity of 0.5 rather than being integers. The only media construct that enforces the frequency slot is the filter (clause 7.1.6). Filtering may be implemented as a part of a coherent receiver (clause 7.1.6).

A network media channel is a type of media channel that is the serial concatenation of all media channels between an OTSi modulator and an OTSi demodulator, it supports a single OTSi. For example, in Figure 7-1 the network media channel for OTSi #2 is formed by the concatenation of media channels A+E+F+G+H. The network media channel must be present to allow the OTSi to be propagated from the OTSi modulator to the OTSi demodulator. The network media channel cannot be divided into smaller media channels (with a narrower slot width) and must be managed as a single entity within the media network. A network media channel cannot be concatenated with another media channel.

The OTSi, defined in [ITU-T G.959.1], is the signal that is carried between the output of an OTSi modulator and the input of an OTSi demodulator. The OTSi is carried by a network media channel. Even in the case where the OTSi consists of a group of modulated optical carriers or subcarriers (see [ITU-T G.959.1]), these multiple optical carriers or subcarriers are carried in a single network media channel and the OTSi is managed as a single entity within the media network.

Two (or more) network media channels can use the same (wider) media channel as a part of the concatenation that forms the network media channel. For example, in Figure 7-1 the network media channel for OTSi #1 (B+E+F+G+I) and the network media channel for OTSi #2 (A+E+F+G+H) share media channels E+F+G. The effective frequency slot of the network media channel must be sufficient to accommodate the characteristics of the OTSi that it is intended to support[2]. The bandwidth of the OTSi modulator and the OTSi demodulator (particularly if it uses a coherent receiver which implements an optical filter), must be taken into account when the effective frequency slot of the network media channel is computed. The network media channel also has an application identifier[3] that is defined by considering the combined effect of the effective slot width and the transfer parameters of each of the media channels. The transfer parameters include, for example, optical noise; non-linear impairments; latency. The definition of transfer parameters is

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1 For the purposes of management or control when a "wider" media channel is a part of the concatenation that is used to form longer media channels, it may be necessary to record the frequency slots of the longer media channels that are attached at each end. For example, in Figure 7-1 for media channel E the frequency slots of media channels A, B, C, D, F and K should be marked as "occupied".

2 The relationship between the effective frequency slot, the passband of the filters concatenated to form a network media channel and the characteristics of the OTSi that transits the network media channel are outside the scope of this Recommendation.

3 An application identifier includes the application codes defined in the appropriate optical system Recommendations, as well as the possibility of proprietary identifiers. The identifier covers all aspects of the media channel.

outside the scope of this Recommendation. The network media channel application identifier is used to confirm the compatibility between the network media channel and the OTSi that it is intended to carry. The mapping from the effective slot width and transfer parameters to the application code is, in general, a complex process and is outside the scope of this Recommendation.

The relationship between signals, media channels and the ports on other media constructs is shown in Figure 7-2.

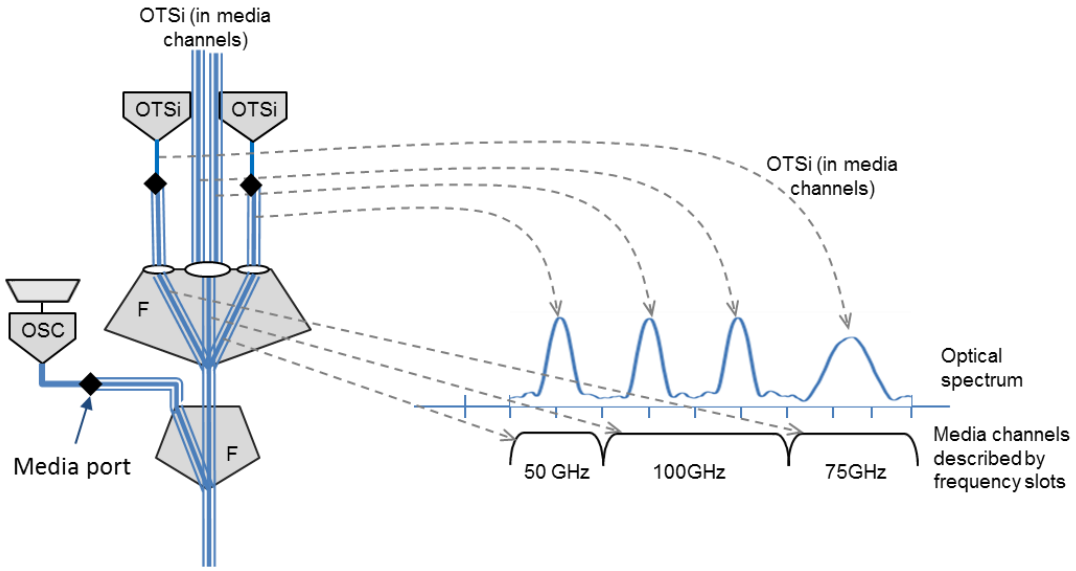

Figure 7-2 – Relationship between signals and media channels

A media channel may be dimensioned to carry more than one OTSi. A media channel may be configured before it has been decided which OTSi will be allocated to it. A media channel may not be capable of supporting the transfer of a particular OTSi.

Transition between different types of media is described in Annex A.

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