UK Interoperability Standards

Open Forum 2018

7th November 2018

UK Interoperability Standards

NICC DSL Task Group
A(nother) year in review

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7 November 2018

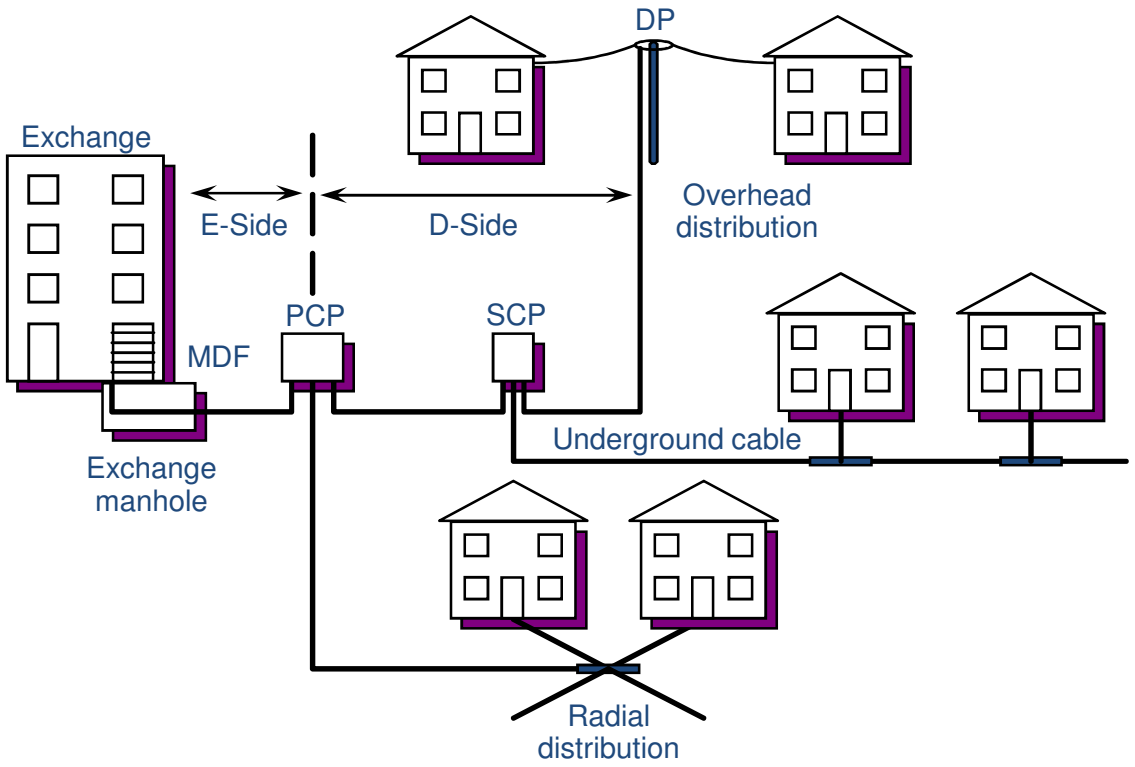
Outline

- NICC DSL TG Scope
- Participants, meetings and working methods
- DSL TG work programme review
  - Completed
  - In pipeline
- Summary

DSL TG scope

Specifications and guidelines relating to **Digital Subscriber Line** technology in the unbundled UK metallic access network

- BT
- KCOM



Key documents are the Access Network Frequency Plans and Metallic Path Facility specifications and guidelines

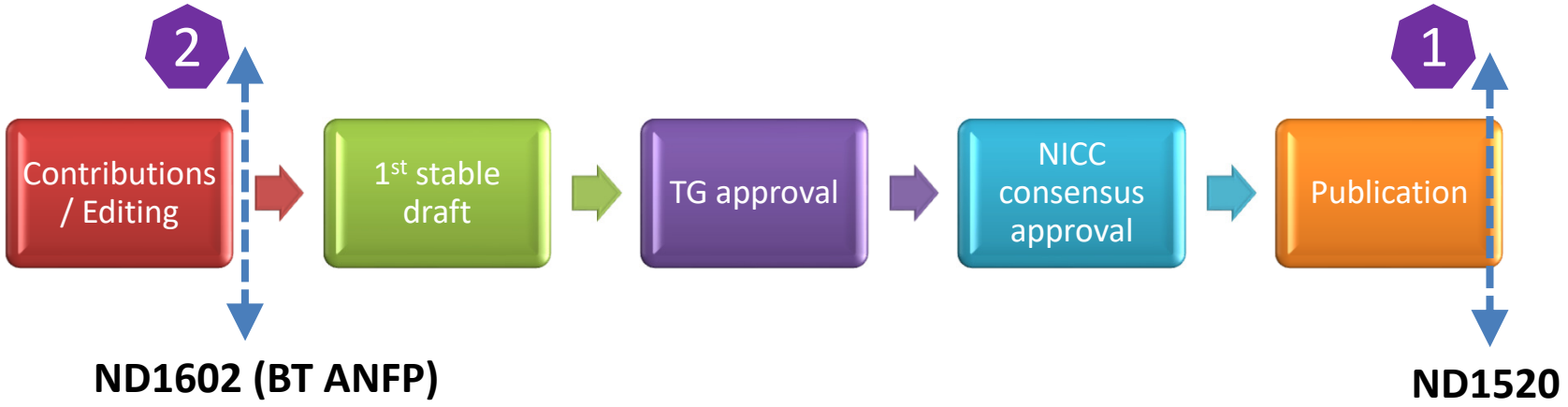
DSL TG meetings

- 12 meetings since the last Open Forum
  - 3 Face-to-face meetings hosted by a NICC member
  - 9 Teleconferences

Operators/CPs	Equipment/chip vendor	Other organisations
BT Group (inc. Openreach)	ASSIA	Ofcom
Sky	ECI	
Talk-Talk	Huawei	
Vodafone	Intel	
	Nokia	
	Sckipio	

Work plan

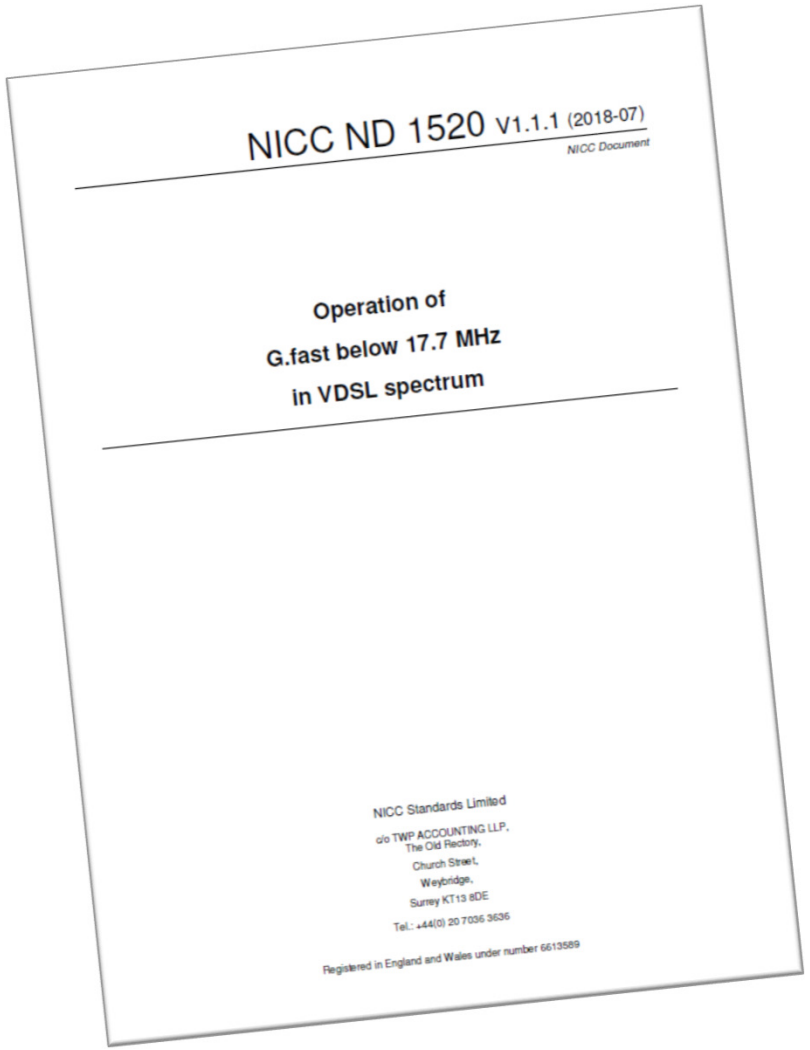
Work Item #	Description	Target ND	Status
321	Overlapping spectrum study and change to BT ANFP and BT ANFP Guidelines	Study report ND1520 and then uplift ND1602 and ND1405	Complex study work completed looking at technical options for giving more low-frequency spectrum to G.fast whilst limiting impact to VDSL2



ND1520 published

- Operation of G.fast below 17.7MHz in VDSL spectrum
- Published July 2018

- This document summarises the most practical options to enable the use of a lower start frequency for G.fast, below the 19MHz currently specified in V6 of the ANFP [1] and how those options meet the caveats from the work item on the implementation of such options. Each option includes PSDs and control methods. The scope includes those frequencies where there is currently exclusive use by VDSL systems. Frequencies below 2.2MHz are not used by G.fast and are out of scope.



NICC ND 1520 V1.1.1 (2018-07)

NICC Document

Operation of
G.fast below 17.7 MHz
in VDSL spectrum

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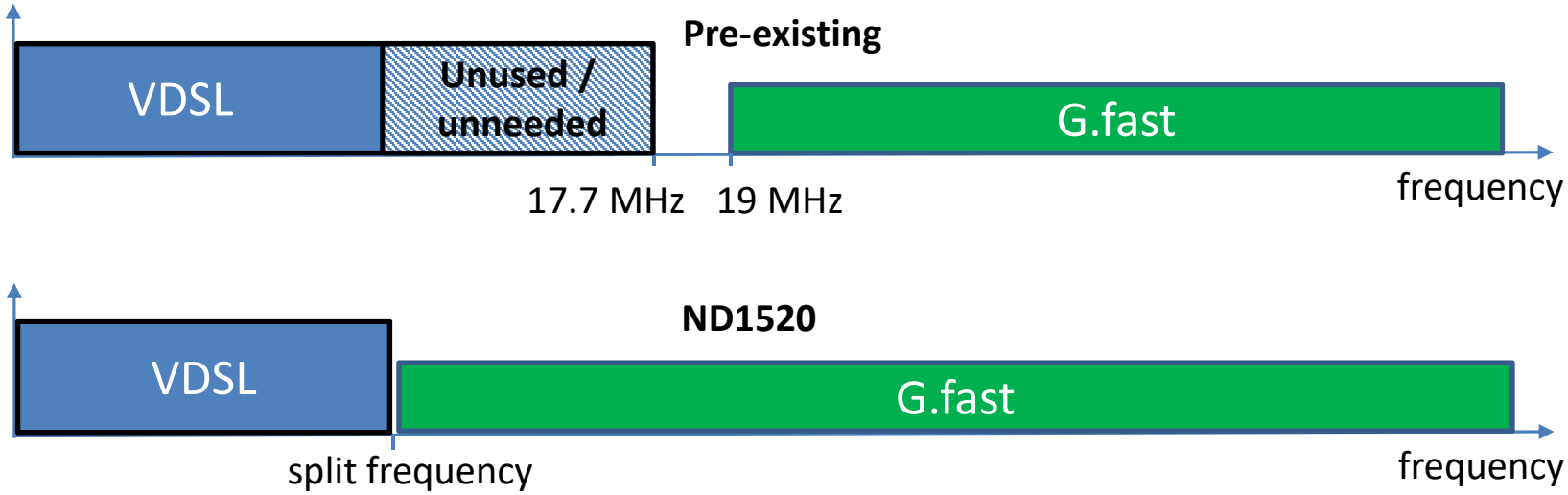
ND1520 overview

- **Operation of G.fast below 17.7 MHz in VDSL spectrum**



- Many methods and cases of operation of G.fast below 17.7 MHz in VDSL spectrum identified that benefit G.fast performance, although some cases sometimes impact existing VDSL performance.
- Use cases, technical options, control impacts, network models, quantitative simulation analyses; all analysed in detail and summarised.

ND1520 technical options

- Detailed comparisons of all options
  1. No change to existing ANFP
  2. Static overlapping
  3. Re-farming; static re-assignment of high frequencies from VDSL to G.fast
  4. Variable split frequency; allow G.fast to use high frequencies on long loops unused by VDSL
  5. Variable split frequency per line (dynamic)
- Options 3-5 offered attractive G.fast performance increases with varying complexities
  - Option 2 had too many problems!

Outlook for 2019

Update the BT ANFP to V7 for increased rate/reach for G.fast and LR-VDSL

(ND1602)

Update the BT ANFP guidelines

(ND1405)

Summary

- The NICC DSL TG has been very active on G.fast and VDSL spectrum considerations
  - Good levels of participation; operators, vendors and Ofcom
- The study on technical options was completed (ND1520)
- Currently working on changes to BT ANFP (ND1602) to enable increased rate/reach for G.fast and LR-VDSL
  - Expect to publish V7 of BT ANFP during March 2019
- Work will then commence on uplifting the Guidelines (ND1405)
  - Expect to publish Guidelines during September 2019


Thank You