

Spectrally Compatible Bandplans for 802.3ah

Behrooz Rezvani

Ikanos Communications

Current Approved Bandplans

- The currently approved bandplans are plans Fx in ITU-T, 998,997 in ITU-T as well as ANSI and ETSI respectively
- Problems:
 - Bandplan 998 is not meeting the rate objectives under all conditions (750 meters)
 - Bandplan 998 is not designed for symmetric services

Spectral compatibility

- Currently a new guideline has been devised to allow for introduction of new bandplans
- Based on this new guidelines it is possible and advisable to select a new bandplan
- Bandplan is independent of linecode discussions

Ideal simulation results

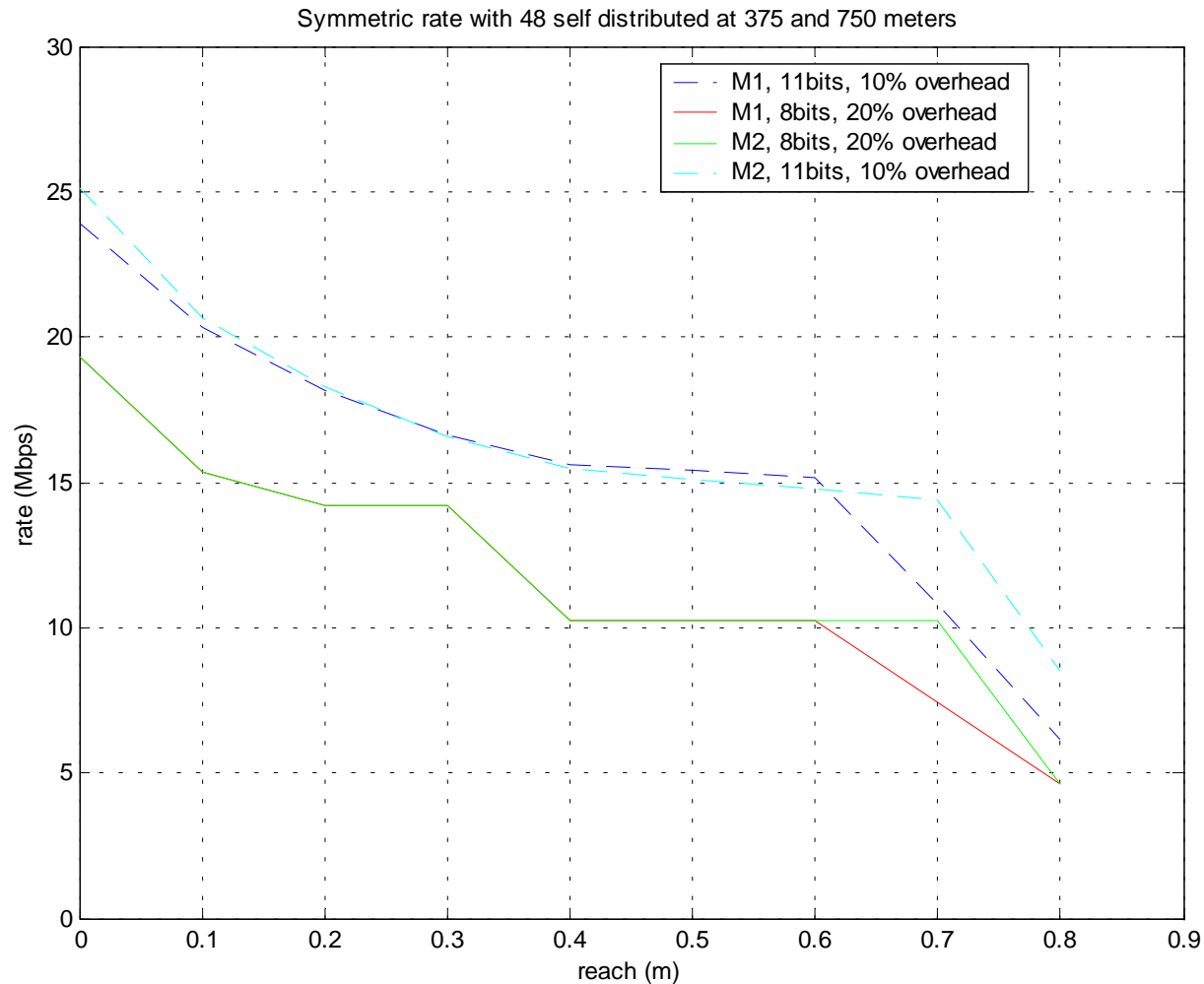
- Next few graphs indicate that in simple installation under very ideal assumptions the payload rate fall below 10 Mbps around 600 to 700 meters
- It is shown that PBO is required
- This results will be further deteriorate if bridge-taps are included in the simulation

VDSL Spectral Compatibility Test

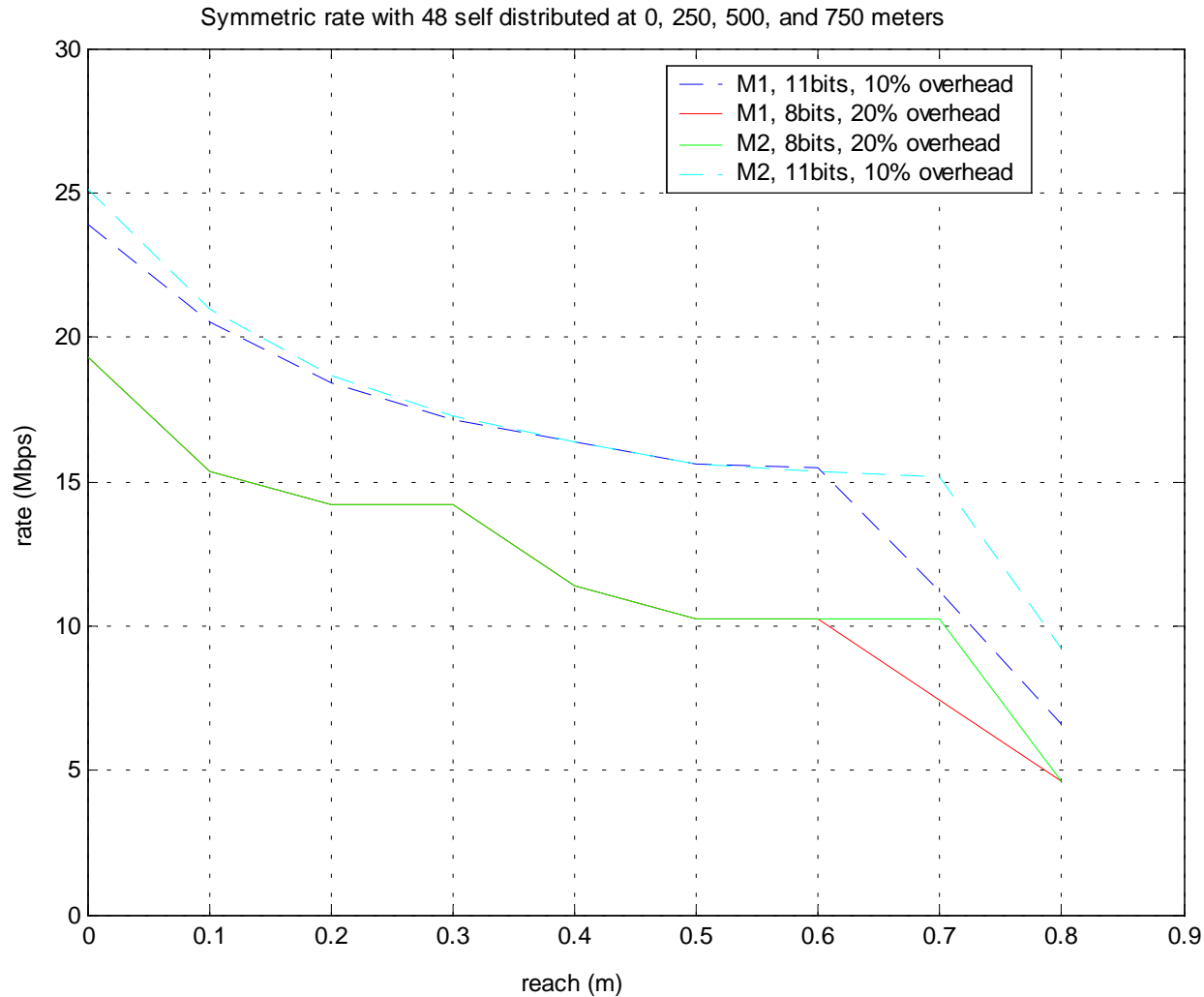
Table. 1. Basis VDSL performance level tests.

Performance level	Loop length (kft)	Upstream Mbps	Downstream Mbps
A	0.5	15.66	42.29
B	1	14.01	42.29
C	1.5	12.86	38.85
D	2	11.97	36.29
E	2.5	9.08	32.5
F	3	5.47	26.3
G	3.5	3.66	22.12
H	4	1.65	18.70
I	4.5	0.42	15.40
J	5	0.074	11.67

998-4-band Symmetric Rate with 48 self-FEXT; 24 at each of 375 and 750 meters (Standard M1 and M2 masks, FTTcab deployment, noise A environment UPBO)



998-4-band Symmetric Rate with 48 self-FEXT; 12 at each of 0, 250, 500, and 750 meters (Standard M1 and M2 masks, FTTcab deployment, noise A environment UPBO)



998-4-band Symmetric Rate with 48 self-FEXT; 12 at each of 0, 250, 500, and 750 meters (Standard M1 mask, FTTcab deployment, UPBO vs. no UPBO)

