

IEEE P802.3bn Work Items for January 2014

Status: S = baseline starting point, B = baseline proposal, D = in draft, N/A = not applicable, <blank> = no status

Downstream PHY Layer

Item	Status	Notes / Comment / References
Reconciliation	N/A	No changes
PCS:		
• 64b/66b/65b Encoder / Decoder	D	
• FEC and Data Detector		
○ FDD	D	
○ TDD		TD#96: pietsch_3bn_01a_0913.pdf
○ MTTFPA	D	TD#93: prodan_3bn_02a_0913.pdf
• Scrambler / Randomizer (Jin)		
PMA:		
• OFDM Numerology	B	
• Symbol Mapper	S	TD#110: laubach_3bn_04c_1113.pdf
○ Constellation Mapping		TD#103: prodan_3bn_02_1113.pdf
• Interleaving		
○ Time	S	TD#110: laubach_3bn_04c_1113.pdf
○ Frequency (Rich, Avi)		T.B.D. for frequency interleaving
• Pilot Insertion (Avi, Christian, Jin)	S	TD#67 kliger_3bn_02_0513.pdf
• IFFT / IDFT	S	TD#110: laubach_3bn_04c_1113.pdf
• Cyclic Prefix and Windowing	S	TD#110: laubach_3bn_04c_1113.pdf
• Subcarrier Configuration		
○ QAM Mapping		
• Bit Loading		
• Scattered Pilots / Map		
• Exclusion Rules	S	TD#110: laubach_3bn_04c_1113.pdf
• TDD Markers		
• Burst Structure		Coupled to PLC cycle
• Multiple OFDM Channels (Mark, Avi, ...)		
• TDD Burst Marker (Syed, Leo)		
• TDD Burst Control / Local Gates		
PMD:		
• Electrical Input / Output	B	TD#104: rahman_saif_3bn_02_1113.pdf
• Fidelity	B	
• MDI	B	
Other:		
• Downstream PHY Block Diagram	S	TD#110: laubach_3bn_04c_1113.pdf
• Subcarrier Clocking, Accuracy	S	
• Acquisition	S	

Downstream MPCP / OAM

Item	Status	Notes / Comment / References
MPCP:		
• Rate Adaptation		
• FEC Adaptation (Duane)		
• TDD Augmentation		
OAM:		

Upstream PHY

Item	Status	Notes / Comment / References
Upstream TX Block Diagram	B	TD#107: kliger_3bn_01a_1113.pdf
Reconciliation	N/A	No changes
PCS:		
• 64b/66b/65b Encoder / Decoder	D	
• FEC Codeword Builder and Data Detector		
○ FDD Active / Passive FEC Codewords	B	
○ FDD Codeword Builder (Rich)	B	TD#103: prodan_3bn_01_1113.pdf
○ TDD Passive FEC Codewords	B	TD#96: pietsch_3bn_01a_0913.pdf
○ TDD Codeword Builder		
○ MTTFPA		TD#93: prodan_3bn_02a_0913.pdf
• Scrambler / Randomizer		
PMA:		
• OFDM Numerology	B	
• Symbol Mapper		
○ Markers		
○ Constellation Mapping	B	TD#103: prodan_3bn_02_1113.pdf
• Interleaving and OFDM Framer		
○ Pilot Pattern (Avi, others)		
○ Probe Generator / Probing (Leo)		
○ Interleaver (Duane, Avi)		
• IFFT / IDFT		
• Pre-Equalization (Leo)		
• Cyclic Prefix and Windowing		
• Subcarrier Configuration		
○ Bit Loading		
• Burst Structure / Resource Blocks		
• Burst Markers	B	TD#109: rahman_syed_3bn_01_1113.pdf
○ Power Boosting		TD#109: T.B.D.
• Exclusion Rules		
• Multiple OFDM Channels (Mark, Avi, ...)		
• 1D-to-2D subcarrier assignment, etc.		
• Wide Band Probing	B	TD#106: rahman_syed_3bn_02_1113.pdf
○ MPCP impact / coordination		
• TDD Functionality ?		
PMD:		
• Electrical Input / Output		
• Fidelity		
• MDI		

Upstream MPCP / OAM

Item	Status	Notes / Comment / References
MPCP:		
• Rate Adaptation		
• FEC Adaptation / Impact (Duane)		
• TDD Augmentation		
OAM:		

Downstream PHY Link

Item	Status	Notes / Comment / References
PLC Messages:		
• Content	S	TD#77: kliger_3bn_01b_0713.pdf
• Protocol	S	
NCP Generation		
PLC Insertions:		
• NCP	S	
• Timestamp MB		
• EE MB		
• Trigger MB		
FEC	B	
Scrambler		
Time Interleaving		
Symbol Mapper	S	
PLC Preamble	S	TD#76: montreuil_3bn_01_0713.pdf

Upstream PHY Link

Item	Status	Notes / Comment / References
PLC Messages:		
• Content	S	TD#77: kliger_3bn_01b_0713.pdf
• Protocol	s	
FEC	B	
Scrambler		
Symbol Mapper		
Initial Ranging:		
• FEC + CRC	S	TD#105: shen_3bn_01_1113.pdf
• Content		
Fine Ranging:		
• FEC	S	TD#105: shen_3bn_01_1113.pdf
• Content		
PLC Preamble ?		

PHY Link Other

Item	Status	Notes / Comment / References
PLC Starting Point	S	Boyd work
PLC Baseline Work	B	TD#113: remein_3bn_07_1113.pdf remein_3bn_08_1113.pdf
PLC Placement		Some content being merged as per TD#113 from laubach_3bn_04c_1113.pdf
PLC Structure		
PHY Parameters carried by PLC		
Mapping of Bytes to Bit Stream		
Mapping to 16 QAM		
PLC Timestamp Reference Point		
PHY Link and procedures: (Avi, Duane, Jin)		
<ul style="list-style-type: none"> • “Bring up” through auto-negotiation to Linked 		
<ul style="list-style-type: none"> • “Ranging” and symbol synchronization (Bill, Leo, Avi, Hesham) 		
<ul style="list-style-type: none"> • Includes periodic maintenance 		
PHY Link acquisition:		
<ul style="list-style-type: none"> • “Lock” and “lost sync” procedures 		

System Issues

Item	Status	Notes / Comment / References
PHY path diagrams: (Avi, Mark)		
• DS	B	
• US	B	
FEC CRC-40 baseline text (Marek, Rich, BZ)	B	
Sublayer interfaces (Marek, Mark)		
Clocking / jitter		
Time Synchronization (Bill)		
MPCP Interoperation:		
• Gate / Report ()		
• MAC Discovery and registration verification ()		
Performance:		
• Error rates		
• Latency / Jitter		
Proactive Network Management (PNM):		
• Add instrumentation / counters etc. to EPoC PHY receivers		
• OAM impact for IEEE?		