

Mission Type	Lunar Missions			
	Today	2015	2020	2025
Coding DFE	BCH	BCH or LDPC	LDPC	LDPC
Coding DTE	Concatenated	Concatenated, turbo, LDPC	Turbo or LDPC, long erasure codes for payload data	Turbo or LDPC, long erasure codes for payload data
Coding In Space Link	N/A	N/A	Convolutional, LDPC	Convolutional, LDPC
Coding Relay – Earth Link	N/A	N/A	LDPC	LDPC
Forward Symbol Rates	Up to. 4ks/s	Up to 1 Mb/s	Up to 100 Mb/s	Up to 100 Mb/s
Return Symbol Rates	TT&C return link few ks/s, payload return link up to 10 Mb/s	Up to 150 Mb/s	Up to 250 Mb/s	Up to 250 Mb/s
Forward Space Link Protocol(s)	Conventional packet TC	Conventional packet TC, AOS, encapsulation service	Conventional packet TC (including low level emergency commanding), AOS, modified CFDP and AMS over DTN	Conventional packet TC (including low level emergency commanding),, AOS, modified CFDP and AMS over DTN
Return Space Link Protocol(s)	Conventional packet TM, AOS framing for payload data	Conventional packet TM, AOS framing	Conventional packet TM, AOS framing, AMS and modified CFDP over DTN	Conventional packet TM, AMS and modified CFDP over DTN
Navigation Technologies	Doppler, tone/code ranging	Doppler, tone/code and SNIP PN ranging	Doppler, SNIP PN ranging	Doppler, SNIP PN ranging