|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **USLP Forward Link Frame Size** | **USLP Return Link Frame Size** | **Forward link Coding** | **Forward link Coding Code& Sync Blue Book Referenced** | **Return link Coding** | **Return link Coding Code& Sync Blue Book Referenced** |
| Variable | Variable | BCH, LDPC, None | Proximity-1, TC | Convolutional, None | Proximity-1, TM |
| Variable | Fixed | BCH, LDPC, None | Proximity-1, TC | RS, Turbo, LDPC, SCCC, DVB-S, Convolutional, None | TM, DVB-S, SCCC |
| Fixed | Variable | RS, Turbo, LDPC, SCCC, DVB-S, Convolutional, None | Proximity-1, TC, TM, DVB-S, SCCC | Convolutional, None | Proximity-1, TM |
| Fixed | Fixed | RS, Turbo, LDPC, SCCC, DVB-S, Convolutional, None | Proximity-1, TC, TM, DVB-S, SCCC | RS, Turbo, LDPC, SCCC, DVB-S, Convolutional, None | TM, DVB-S, SCCC |

Action: create a table showing under what conditions COP-1 and/or COP-P apply for USLP. Both forward (command) and return (telemetry) links will be described.

I have created the following table that reflects the possible combinations of the USLP Frame Size and the currently allowed coding schemes for each link.

The COP-P PLCWs needs to be carried in separate frames that are too small for block codes defined in TM code & sync. (SCCC and DVB-S needs to be checked). Therefore, only Convolutional can be used to allow for this small frame size.

COP-1 CLCWs are appended to a fixed length frames, where convolutional and block codes can be used – assuming that the frame length is chosen from the specified coding books .

Therefore, you can derive the following table:

|  |  |  |
| --- | --- | --- |
| **USLP Forward Link Size** | **USLP Return Link Size** | **COP- Allowed** |
| Variable | Variable | COP-P |
| Variable | Fixed | COP-1 |
| Fixed | Variable | COP-P |
| Fixed | Fixed | COP-1 |

This in fact condenses down further to the following table, where the selection of the COP is only driven by the whether the return link USLP frame is either variable or fixed length. :

|  |  |
| --- | --- |
| **USLP Return Link Frame Size** | **COP- Allowed** |
| Variable | COP-P |
| Fixed | COP-1 |