4	Bits 67-85= 000000000 0101101000 = 168 Bits 115-132= 110110011 011001101 = 366CD Bits 109-112= 1001 = 9	✓
5	Bits 67-85= 000000010 0101100110 = 00966 Bits 115-132= 110101110 010010000 = 35C90 Bits 109-112= 0000 = 0	✓
6	Bits 67-85= 100000000 1101101000 = 40368 Bits 115-132= 110110001 011100000 = 362E0 Bits 109-112= 0000 = 0	✓
7	Bits 67-85= 110110011 0010110010 = 6CCB2 Bits 115-132= 011101101 100000000 = 1DB00 Bits 109-112= 0001 = 1	✓
8	Bits 67-85= 110110011 1010110010 = 6CEB2 Bits 115-132= 011011100 100000000 = 1B900 Bits 109-112= 1011 = B	✓
9	Bits 67-85= 010110100 1101101000 = 2D368 Bits 115-132= 000001110 000000001 = 01C01 Bits 109-112= 1101 = D	✓
10	Bits 67-85= 010110100 0101101000 = 2D168 Bits 115-132= 000100000 000001001 = 04009 Bits 109-112= 1110 = E	✓
11	Bits 67-85= 101001001 1100010101 = 52715 Bits 115-132= 100000000 100000000 = 20100 Bits 109-112= 1110 = E	✓
12	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
13	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓

5.3.5 Position Data Encoding – Appendix C to Annex F: NAVIGATION SYSTEM TEST RESULTS - Table F-C.4 – internal GNSS source – ELT(DT) AOD protocol

Table F-C.4 of C/S T.007 Issue 5 Rev 7, June 2021
Position Data Encoding Results ELT(DT) Location Protocol

Script Reference (See Table D.4)	Value of Encoded Location Bits Transmitted by Beacon	Confirmation that BCH Correct (☑)
1	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
2	Bits 67-85= 100000000 1000000000 = 40200 Bits 115-132= 100010000 100001110 = 2210E **Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 1 second** Bits 109-112= 0100 = 4	✓

3	Bits 67-85= 000000000 0000000000 = 0 Bits 115-132= 100001101 100001101 = 21B0D Bits 109-112= 1001 = A	✓
4	Bits 67-85= 000000000 0101101000 = 168 Bits 115-132= 110110011 011001101 = 366CD Bits 109-112= 1001 = 9	✓
5	Bits 67-85= 000000010 0101100110 = 00966 Bits 115-132= 110101110 010010000 = 35C90 Bits 109-112= 0000 = 0	✓
6	Bits 67-85= 100000000 1101101000 = 40368 Bits 115-132= 110110001 011100000 = 362E0 Bits 109-112= 0000 = 0	✓
7	Bits 67-85= 110110011 0010110010 = 6CCB2 Bits 115-132= 011101101 100000000 = 1DB00 Bits 109-112= 0001 = 1	✓
8	Bits 67-85= 110110011 1010110010 = 6CEB2 Bits 115-132= 011011100 100000000 = 1B900 Bits 109-112= 1011 = B	✓
9	Bits 67-85= 010110100 1101101000 = 2D368 Bits 115-132= 000001110 000000001 = 01C01 Bits 109-112= 1101 = D	✓
10	Bits 67-85= 010110100 0101101000 = 2D168 Bits 115-132= 000100000 000001001 = 04009 Bits 109-112= 1110 = E	✓
11	Bits 67-85= 101001001 1100010101 = 52715 Bits 115-132= 100000000 100000000 = 20100 Bits 109-112= 1110 = E	✓
12	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
13	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓

5.3.6 Position Data Encoding – Appendix C to Annex F: NAVIGATION SYSTEM TEST RESULTS - Table F-C.4 – external ARINC source – ELT(DT) AOD protocol

Table F-C.4 of C/S T.007 Issue 5 Rev 7, June 2021
Position Data Encoding Results ELT(DT) Location Protocol

Script Reference (See Table D.4)	Value of Encoded Location Bits Transmitted by Beacon	Confirmation that BCH Correct (☑)
1	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓

2	Bits 67-85= 100000000 1000000000 = 40200 Bits 115-132= 100010000 100001110 = 2210E **Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 1 second** Bits 109-112= 0100 = 4	✓
3	Bits 67-85= 000000000 0000000000 = 0 Bits 115-132= 100001101 100001101 = 21B0D Bits 109-112= 1001 = A	✓
4	Bits 67-85= 000000000 0101101000 = 168 Bits 115-132= 110110011 011001101 = 366CD Bits 109-112= 1001 = 9	✓
5	Bits 67-85= 000000010 0101100110 = 00966 Bits 115-132= 110101110 010010000 = 35C90 Bits 109-112= 0000 = 0	✓
6	Bits 67-85= 100000000 1101101000 = 40368 Bits 115-132= 110110001 011100000 = 362E0 Bits 109-112= 0000 = 0	✓
7	Bits 67-85= 110110011 0010110010 = 6CCB2 Bits 115-132= 011101101 100000000 = 1DB00 Bits 109-112= 0001 = 1	✓
8	Bits 67-85= 110110011 1010110010 = 6CEB2 Bits 115-132= 011011100 100000000 = 1B900 Bits 109-112= 1011 = B	✓
9	Bits 67-85= 010110100 1101101000 = 2D368 Bits 115-132= 000001110 000000001 = 01C01 Bits 109-112= 1101 = D	✓
10	Bits 67-85= 010110100 0101101000 = 2D168 Bits 115-132= 000100000 000001001 = 04009 Bits 109-112= 1110 = E	✓
11	Bits 67-85= 101001001 1100010101 = 52715 Bits 115-132= 100000000 100000000 = 20100 Bits 109-112= 1110 = E	✓
12	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
13	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓

5.3.7 Position Data Encoding – Appendix C to Annex F: NAVIGATION SYSTEM TEST RESULTS - Table F-C.4 – internal GNSS source – ELT(DT) 24bits ADR protocol

Table F-C.4 of C/S T.007 Issue 5 Rev 7, June 2021
Position Data Encoding Results ELT(DT) Location Protocol

Script Reference (See Table D.4)	Value of Encoded Location Bits Transmitted by Beacon	Confirmation that BCH Correct (☑)

TEST REPORT

1	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
2	Bits 67-85= 100000000 1000000000 = 40200 Bits 115-132= 100010000 100001110 = 2210E **Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 1 second** Bits 109-112= 0100 = 4	✓
3	Bits 67-85= 000000000 0000000000 = 0 Bits 115-132= 100001101 100001101 = 21B0D Bits 109-112= 1001 = A	✓
4	Bits 67-85= 000000000 0101101000 = 168 Bits 115-132= 110110011 011001101 = 366CD Bits 109-112= 1001 = 9	✓
5	Bits 67-85= 000000010 0101100110 = 00966 Bits 115-132= 110101110 010010000 = 35C90 Bits 109-112= 0000 = 0	✓
6	Bits 67-85= 100000000 1101101000 = 40368 Bits 115-132= 110110001 011100000 = 362E0 Bits 109-112= 0000 = 0	✓
7	Bits 67-85= 110110011 0010110010 = 6CCB2 Bits 115-132= 011101101 100000000 = 1DB00 Bits 109-112= 0001 = 1	✓
8	Bits 67-85= 110110011 1010110010 = 6CEB2 Bits 115-132= 011011100 100000000 = 1B900 Bits 109-112= 1011 = B	✓
9	Bits 67-85= 010110100 1101101000 = 2D368 Bits 115-132= 000001110 000000001 = 01C01 Bits 109-112= 1101 = D	✓
10	Bits 67-85= 010110100 0101101000 = 2D168 Bits 115-132= 000100000 000001001 = 04009 Bits 109-112= 1110 = E	✓
11	Bits 67-85= 101001001 1100010101 = 52715 Bits 115-132= 100000000 100000000 = 20100 Bits 109-112= 1110 = E	✓
12	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
13	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓

5.3.8 Position Data Encoding – Appendix C to Annex F: NAVIGATION SYSTEM TEST RESULTS - Table F-C.4 – internal GNSS source – ELT(DT) 24bits ADR protocol, with 3LD

Table F-C.4 of C/S T.007 Issue 5 Rev 7, June 2021
Position Data Encoding Results ELT(DT) Location Protocol

Script Reference (See Table D.4)	Value of Encoded Location Bits Transmitted by Beacon	Confirmation that BCH Correct (☑)
1	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
2	Bits 67-85= 100000000 1000000000 = 40200 Bits 115-132= 100010000 100001110 = 2210E **Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 1 second** Bits 109-112= 0100 = 4	✓
3	Bits 67-85= 000000000 0000000000 = 0 Bits 115-132= 100001101 100001101 = 21B0D Bits 109-112= 1001 = A	✓
4	Bits 67-85= 000000000 0101101000 = 168 Bits 115-132= 110110011 011001101 = 366CD Bits 109-112= 1001 = 9	✓
5	Bits 67-85= 000000010 0101100110 = 00966 Bits 115-132= 110101110 010010000 = 35C90 Bits 109-112= 0000 = 0	✓
6	Bits 67-85= 100000000 1101101000 = 40368 Bits 115-132= 110110001 011100000 = 362E0 Bits 109-112= 0000 = 0	✓
7	Bits 67-85= 110110011 0010110010 = 6CCB2 Bits 115-132= 011101101 100000000 = 1DB00 Bits 109-112= 0001 = 1	✓
8	Bits 67-85= 110110011 1010110010 = 6CEB2 Bits 115-132= 011011100 100000000 = 1B900 Bits 109-112= 1011 = B	✓
9	Bits 67-85= 010110100 1101101000 = 2D368 Bits 115-132= 000001110 000000001 = 01C01 Bits 109-112= 1101 = D	✓
10	Bits 67-85= 010110100 0101101000 = 2D168 Bits 115-132= 000100000 000001001 = 04009 Bits 109-112= 1110 = E	✓
11	Bits 67-85= 101001001 1100010101 = 52715 Bits 115-132= 100000000 100000000 = 20100 Bits 109-112= 1110 = E	✓
12	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 056B5 Bits 109-112= 1111 = F Bits 113-114 = 0	✓

13	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 056B5 Bits 109-112= 1111 = F Bits 113-114 = 0	✓

5.3.9 Position Data Encoding – Appendix C to Annex F: NAVIGATION SYSTEM TEST RESULTS - Table F-C.4 – external (ARINC) location source – ELT(DT) 24bits ADR protocol

Table F-C.4 of C/S T.007 Issue 5 Rev 7, June 2021
Position Data Encoding Results ELT(DT) Location Protocol

Script Reference (See Table D.4)	Value of Encoded Location Bits Transmitted by Beacon	Confirmation that BCH Correct (☑)
1	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112 = 1111 = F	✓
2	Bits 67-85= 100000000 1000010000 = 40210 Bits 115-132= 100010000 100001110 = 22108 **Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 2 seconds** Bits 109-112= 4	✓
3	Bits 67-85= 000000000 0000000000 = 0 Bits 115-132= 100001101 100001101 = 21B0D Bits 109-112= A	✓
4	Bits 67-85= 000000000 0101101000 = 168 Bits 115-132= 110110010 011001101 = 366CD Bits 109-112= 9	✓
5	Bits 67-85= 000000010 0101100110 = 00966 Bits 115-132= 110101110 010010000 = 35C90 Bits 109-112= 0	✓
6	Bits 67-85= 100000000 1101101000 = 40368 Bits 115-132= 110110001 011100000 = 362E0 Bits 109-112= 0	✓
7	Bits 67-85= 110110011 0010110010 = 6CCB2 Bits 115-132= 011101101 100000000 = 1DB00 Bits 109-112= 1	✓
8	Bits 67-85= 110110011 1010110010 = 6CEB2 Bits 115-132= 011011101 100000000 = 1B900 Bits 109-112= B	✓
9	Bits 67-85= 010110100 1101101000 = 2D368 Bits 115-132= 000001110 000000010 = 01C01 Bits 109-112= D	✓
10	Bits 67-85= 010110100 0101101000 = 2D168 Bits 115-132= 000100000 000001001 = 04009	✓

	Bits 109-112= E	
11	Bits 67-85= 101001001 1100010101 = 52715 Bits 115-132= 100000000 100000000 = 20100 Bits 109-112= E	✓
12	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= F	✓
13	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= F	✓

5.3.10 Position Data Encoding – Appendix C to Annex F: NAVIGATION SYSTEM TEST RESULTS - Table F-C.4 – external ARINC source – ELT(DT) 24bits ADR protocol, with 3LD

Table F-C.4 of C/S T.007 Issue 5 Rev 7, June 2021
Position Data Encoding Results ELT(DT) Location Protocol

Script Reference (See Table D.4)	Value of Encoded Location Bits Transmitted by Beacon	Confirmation that BCH Correct (☑)
1	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
2	Bits 67-85= 100000000 1000000000 = 40200 Bits 115-132= 100010000 100001110 = 2210E **Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 2 seconds** Bits 109-112= 0100 = 4	✓
3	Bits 67-85= 000000000 0000000000 = 0 Bits 115-132= 100001101 100001101 = 21B0D Bits 109-112= 1001 = A	✓
4	Bits 67-85= 000000000 0101101000 = 168 Bits 115-132= 110110011 011001101 = 366CD Bits 109-112= 1001 = 9	✓
5	Bits 67-85= 000000010 0101100110 = 00966 Bits 115-132= 110101110 010010000 = 35C90 Bits 109-112= 0000 = 0	✓
6	Bits 67-85= 100000000 1101101000 = 40368 Bits 115-132= 110110001 011100000 = 362E0 Bits 109-112= 0000 = 0	✓
7	Bits 67-85= 110110011 0010110010 = 6CCB2 Bits 115-132= 011101101 100000000 = 1DB00 Bits 109-112= 0001 = 1	✓
8	Bits 67-85= 110110011 1010110010 = 6CEB2 Bits 115-132= 011011100 100000000 = 1B900 Bits 109-112= 1011 = B	✓

9	Bits 67-85= 010110100 1101101000 = 2D368 Bits 115-132= 000001110 000000001 = 01C01 Bits 109-112= 1101 = D	✓
10	Bits 67-85= 010110100 0101101000 = 2D168 Bits 115-132= 000100000 000001001 = 04009 Bits 109-112= 1110 = E	✓
11	Bits 67-85= 101001001 1100010101 = 52715 Bits 115-132= 100000000 100000000 = 20100 Bits 109-112= 1110 = E	✓
12	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 056B5 Bits 109-112= 1111 = F Bits 113-114 = 0	✓
13	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 056B5 Bits 109-112= 1111 = F Bits 113-114 = 0	✓

5.3.11 Position Data Encoding – Appendix C to Annex F: NAVIGATION SYSTEM TEST RESULTS - Table F-C.4 – internal GNSS source – ELT(DT) TAC & Serial number protocol

Table F-C.4 of C/S T.007 Issue 5 Rev 7, June 2021
Position Data Encoding Results ELT(DT) Location Protocol

Script Reference (See Table D.4)	Value of Encoded Location Bits Transmitted by Beacon	Confirmation that BCH Correct (☑)
1	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
2	Bits 67-85= 100000000 1000000000 = 40200 Bits 115-132= 100010000 100001110 = 2210E **Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 1 second** Bits 109-112= 0100 = 4	✓
3	Bits 67-85= 000000000 0000000000 = 0 Bits 115-132= 100001101 100001101 = 21B0D Bits 109-112= 1001 = A	✓
4	Bits 67-85= 000000000 0101101000 = 168 Bits 115-132= 110110011 011001101 = 366CD Bits 109-112= 1001 = 9	✓
5	Bits 67-85= 000000010 0101100110 = 00966 Bits 115-132= 110101110 010010000 = 35C90 Bits 109-112= 0000 = 0	✓
6	Bits 67-85= 100000000 1101101000 = 40368 Bits 115-132= 110110001 011100000 = 362E0 Bits 109-112= 0000 = 0	✓

7	Bits 67-85= 110110011 0010110010 = 6CCB2 Bits 115-132= 011101101 100000000 = 1DB00 Bits 109-112= 0001 = 1	✓
8	Bits 67-85= 110110011 1010110010 = 6CEB2 Bits 115-132= 011011100 100000000 = 1B900 Bits 109-112= 1011 = B	✓
9	Bits 67-85= 010110100 1101101000 = 2D368 Bits 115-132= 000001110 000000001 = 01C01 Bits 109-112= 1101 = D	✓
10	Bits 67-85= 010110100 0101101000 = 2D168 Bits 115-132= 000100000 000001001 = 04009 Bits 109-112= 1110 = E	✓
11	Bits 67-85= 101001001 1100010101 = 52715 Bits 115-132= 100000000 100000000 = 20100 Bits 109-112= 1110 = E	✓
12	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
13	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓

5.3.12 Position Data Encoding – Appendix C to Annex F: NAVIGATION SYSTEM TEST RESULTS - Table F-C.4 – external ARINC source – ELT(DT) TAC and Serial number protocol

Table F-C.4 of C/S T.007 Issue 5 Rev 7, June 2021
Position Data Encoding Results ELT(DT) Location Protocol

Script Reference (See Table D.4)	Value of Encoded Location Bits Transmitted by Beacon	Confirmation that BCH Correct (☑)
1	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
2	Bits 67-85= 100000000 1000000000 = 40200 Bits 115-132= 100010000 100001110 = 2210E **Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 1 second** Bits 109-112= 0100 = 4	✓
3	Bits 67-85= 000000000 0000000000 = 0 Bits 115-132= 100001101 100001101 = 21B0D Bits 109-112= 1001 = A	✓
4	Bits 67-85= 000000000 0101101000 = 168 Bits 115-132= 110110011 011001101 = 366CD Bits 109-112= 1001 = 9	✓

5	Bits 67-85= 000000010 0101100110 = 00966 Bits 115-132= 110101110 010010000 = 35C90 Bits 109-112= 0000 = 0	✓
6	Bits 67-85= 100000000 1101101000 = 40368 Bits 115-132= 110110001 011100000 = 362E0 Bits 109-112= 0000 = 0	✓
7	Bits 67-85= 110110011 0010110010 = 6CCB2 Bits 115-132= 011101101 100000000 = 1DB00 Bits 109-112= 0001 = 1	✓
8	Bits 67-85= 110110011 1010110010 = 6CEB2 Bits 115-132= 011011100 100000000 = 1B900 Bits 109-112= 1011 = B	✓
9	Bits 67-85= 010110100 1101101000 = 2D368 Bits 115-132= 000001110 000000001 = 01C01 Bits 109-112= 1101 = D	✓
10	Bits 67-85= 010110100 0101101000 = 2D168 Bits 115-132= 000100000 000001001 = 04009 Bits 109-112= 1110 = E	✓
11	Bits 67-85= 101001001 1100010101 = 52715 Bits 115-132= 100000000 100000000 = 20100 Bits 109-112= 1110 = E	✓
12	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
13	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓

5.3.13 Position Data Encoding – Appendix C to Annex F: NAVIGATION SYSTEM TEST RESULTS - Table F-C.4 – internal GNSS source – ELT(DT) Location Test protocol, with 3LD

Table F-C.4 of C/S T.007 Issue 5 Rev 7, June 2021
Position Data Encoding Results ELT(DT) Location Protocol

Script Reference (See Table D.4)	Value of Encoded Location Bits Transmitted by Beacon	Confirmation that BCH Correct (☑)
1	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓
2	Bits 67-85= 100000000 1000000000 = 40200 Bits 115-132= 100010000 100001110 = 2210E **Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 1 second** Bits 109-112= 0100 = 4	✓

3	Bits 67-85= 000000000 0000000000 = 0 Bits 115-132= 100001101 100001101 = 21B0D Bits 109-112= 1001 = A	✓
4	Bits 67-85= 000000000 0101101000 = 168 Bits 115-132= 110110011 011001101 = 366CD Bits 109-112= 1001 = 9	✓
5	Bits 67-85= 000000010 0101100110 = 00966 Bits 115-132= 110101110 010010000 = 35C90 Bits 109-112= 0000 = 0	✓
6	Bits 67-85= 100000000 1101101000 = 40368 Bits 115-132= 110110001 011100000 = 362E0 Bits 109-112= 0000 = 0	✓
7	Bits 67-85= 110110011 0010110010 = 6CCB2 Bits 115-132= 011101101 100000000 = 1DB00 Bits 109-112= 0001 = 1	✓
8	Bits 67-85= 110110011 1010110010 = 6CEB2 Bits 115-132= 011011100 100000000 = 1B900 Bits 109-112= 1011 = B	✓
9	Bits 67-85= 010110100 1101101000 = 2D368 Bits 115-132= 000001110 000000001 = 01C01 Bits 109-112= 1101 = D	✓
10	Bits 67-85= 010110100 0101101000 = 2D168 Bits 115-132= 000100000 000001001 = 04009 Bits 109-112= 1110 = E	✓
11	Bits 67-85= 101001001 1100010101 = 52715 Bits 115-132= 100000000 100000000 = 20100 Bits 109-112= 1110 = E	✓
12	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 0001010110 10110101 = 056B5 Bits 109-112= 1111 = F Bits 113-114 = 0	✓
13	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 0001010110 10110101 = 056B5 Bits 109-112= 1111 = F Bits 113-114 = 0	✓

5.3.14 Position Data Encoding – Appendix C to Annex F: NAVIGATION SYSTEM TEST RESULTS - Table F-C.4 – external ARINC source – ELT(DT) Location Test protocol, with 3LD

Table F-C.4 of C/S T.007 Issue 5 Rev 7, June 2021
Position Data Encoding Results ELT(DT) Location Protocol

Script Reference (See Table D.4)	Value of Encoded Location Bits Transmitted by Beacon	Confirmation that BCH Correct (☑)
1	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 100001111 100001111 = 21F0F Bits 109-112= 1111 = F	✓

2	Bits 67-85= 100000000 1000000000 = 40200 Bits 115-132= 100010000 100001110 = 2210E **Number of seconds after providing navigation data that beacon transmitted the above encoded location information: 1 second** Bits 109-112= 0100 = 4	✓
3	Bits 67-85= 000000000 0000000000 = 0 Bits 115-132= 100001101 100001101 = 21B0D Bits 109-112= 1001 = A	✓
4	Bits 67-85= 000000000 0101101000 = 168 Bits 115-132= 110110011 011001101 = 366CD Bits 109-112= 1001 = 9	✓
5	Bits 67-85= 000000010 0101100110 = 00966 Bits 115-132= 110101110 010010000 = 35C90 Bits 109-112= 0000 = 0	✓
6	Bits 67-85= 100000000 1101101000 = 40368 Bits 115-132= 110110001 011100000 = 362E0 Bits 109-112= 0000 = 0	✓
7	Bits 67-85= 110110011 0010110010 = 6CCB2 Bits 115-132= 011101101 100000000 = 1DB00 Bits 109-112= 0001 = 1	✓
8	Bits 67-85= 110110011 1010110010 = 6CEB2 Bits 115-132= 011011100 100000000 = 1B900 Bits 109-112= 1011 = B	✓
9	Bits 67-85= 010110100 1101101000 = 2D368 Bits 115-132= 000001110 000000001 = 01C01 Bits 109-112= 1101 = D	✓
10	Bits 67-85= 010110100 0101101000 = 2D168 Bits 115-132= 000100000 000001001 = 04009 Bits 109-112= 1110 = E	✓
11	Bits 67-85= 101001001 1100010101 = 52715 Bits 115-132= 100000000 100000000 = 20100 Bits 109-112= 1110 = E	✓
12	Bits 67-85= 111111111 0111111111 = 3FDFF Bits 115-132= 0001010110 10110101 = 056B5 Bits 109-112= 1111 = F Bits 113-114 = 0	✓
13	Bits 67-85= 011111111 0111111111 = 3FDFF Bits 115-132= 0001010110 10110101 = 056B5 Bits 109-112= 1111 = F Bits 113-114 = 0	✓

5.3.15 Conclusion

- Test is PASSED for internal GNSS location source.
- Test is PASSED for external ARINC location source.

6 Photographs

Not applicable.

7 Test Equipment Used

The following test equipment was used during the execution of the test procedure:

Type	Description	Calibration due
RF Diplexer	Amphenol PRO-DIPX 1000/1550 DC-LH XS	Not applicable
Beacon Tester	WST STB100 Beacon Test Bench S/N: 20001	21-September-2023
Virtual GPS	Generate and transmit NMEA through serial interface Version V1.53, ZylSoft	Not applicable
Power Supply 28V DC	RS3005D ECME 1662	Not applicable
ARINC 429 transmitter	TechSat A429USB-NT P/N 403557 S/N 01169	Not applicable
USB-Serial cable	FTDI TTL RS232 adapter TTL-232R-RPi	Not applicable

8 Other Technical Information

Not applicable.

9 Technical data submitted by Beacon manufacturer

Not applicable

ANNEX B

BATTERY CURRENT MEASUREMENT REPEAT

B.1 BATTERY CURRENT RE-MEASUREMENTS

B.1.1 Specification

Cospas-Sarsat T.007, Clause A.2.3

B.1.2 Equipment Under Test and Modification State

ULTIMA-DT-05 S/N: TO0010000002 - Modification State 0

B.1.3 Date of Test

30 May 2023, 31 May 2023 and 01 June 2023

B.1.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

B.1.5 Laboratory Environmental Conditions

Ambient Temperature 23.1 – 24.3°C
Relative Humidity 30.5 – 34.8%

B.1.6 Test Results

Notes

This section was repeated due to error's being found in the resistance used to calculated current measurements.

Operating Current Measurements and Analysis

System Configuration/Operating Mode Matrix (SCOMM):

System Configuration →	A
Operational Mode ↓	All Ancillaries Connected: Arinc, 28V supply, Remote Panel, Buzzer
1. OFF	A1
2. ARMED disabled mode (including periodic EBIT)	A2
3. ARMED enabled mode	A3
4. ARMED – WITHOUT 28V supply	A4
5. EUT activation from ARINC429 Interface (label 202) ONLY 406MHz (T0 to T1 = T0+6h10) - NO GNSS SIGNAL	A5
6. EUT activation from ARINC429 Interface (label 202) ONLY 406MHz (T0 to T1 = T0+6h10) - GNSS SIGNAL	A6
7. EUT activation WITH 28V power supply loss ONLY 406MHz (T0 to T1 = T0+6h10) - NO GNSS SIGNAL	A7
8. EUT activation from Activation with Crash Sensor 406MHz + 121,5MHz - NO GNSS SIGNAL	A8
9. EUT 121,5MHz after 24hours of beacon operation - NO GNSS SIGNAL	A9
10. EUT activation from beacon front panel control 406MHz + 121,5MHz - NO GNSS SIGNAL	A10
11. EUT activation from Remote Control Panel (RC820) 406MHz + 121,5MHz - NO GNSS SIGNAL	A11
12. Self-test activation from beacon front panel control	A12
13. Self-test from beacon from Remote Control Panel (RC820)	A13
15. GNSS Self-test from beacon front panel control – NO GNSS SIGNAL	A15
16. GNSS Self-test from beacon front panel control – GNSS SIGNAL	A16
17. Cancellation message from beacon front panel control (after EUT activation from beacon front panel control)	A17
18. Cancellation message from ARINC429 Interface (label 202) (after EUT activation from ARINC429 Interface (label 202))	A18
19. EUT activation from beacon front panel control 406MHz + 121,5MHz - NO GNSS SIGNAL and REMOVING 28V just after beacon manual activation	A19

SCOMM Results as per C/S T.007 Table F-E.1:

Beacon Operating Mode	Mode: Manually selectable or Automatic	Measurement interval, sec	Average Current, mA	Peak Current, mA
A1	Manual	1000	-0.000000105	0.0000556
A2	Manual	1000	0.000195	0.000266
A3	Manual	1000	0.000187	0.000264
A4	Manual	1000	0.0000323	0.0000652
A5	Autonomous	1000	116.69	871.06
A6	Autonomous	1000	115.16	854.91
A7	Autonomous	1000	116.95	713.90
A8	Automatic	1000	122.69	450.81
A9	Automatic	1000	28.78	44.88
A10	Manual	1000	125.29	509.23
A11	Manual	1000	125.69	617.67
A12	Manual	26.1	64.98	119.07
A13	Manual	26.2	64.80	119.39
A15	Manual	179.6	30.38	126.12
A16	Manual	26.0	62.04	116.24
A17	Manual	100.1	136.97	199.84
A18	Autonomous	99.9	139.17	410.66
A19	Manual	1000	124.34	916.61

The sampling interval was a nominal 100 ms.

Worst Case System Configurations / Operating Modes

"Lifetime in service" drains (highest average current):

Standby: A2 – All Ancillaries – ARMED disabled mode (including periodic EBIT)

Self-test: A12 – All Ancillaries, Self-Test triggered from beacon front panel

GNSS Self-test (Timeout): A15 – All Ancillaries, GNSS Self-Test triggered from EUT front panel

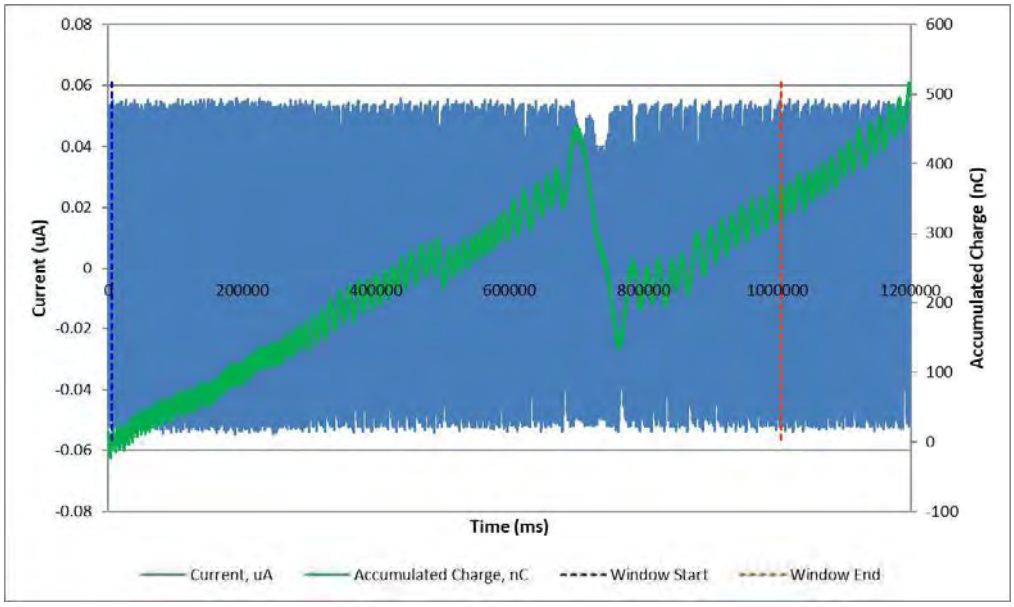
Note: "Worst case" GNSS Self-test is a test which times out because a long message is transmitted regardless of acquisition.

Operating mode during lifetime test (highest average current):

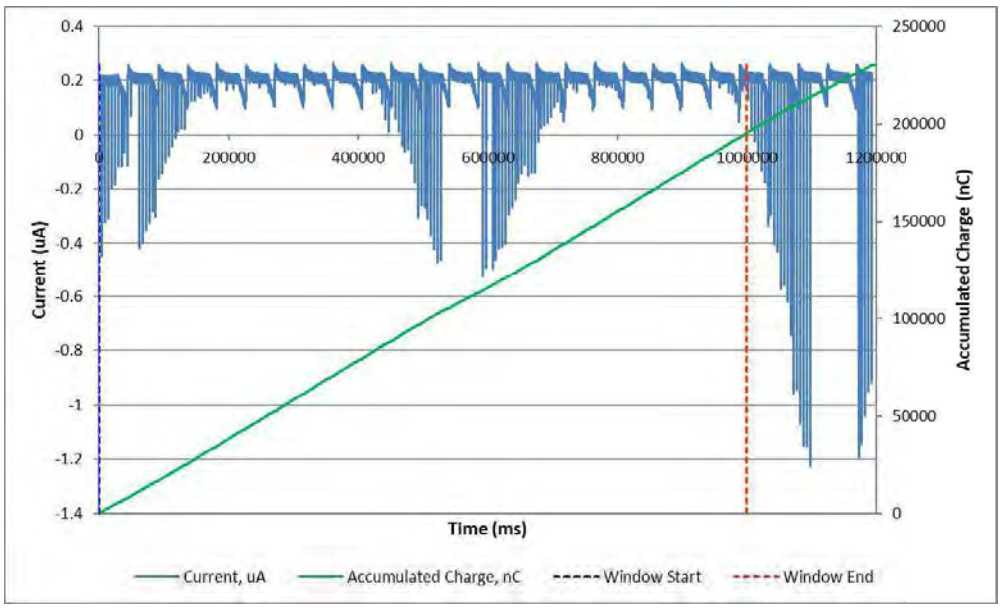
A11 – All Ancillaries, EUT triggered from Remote Control Panel (RC820)

GNSS Signals: No GNSS Applied

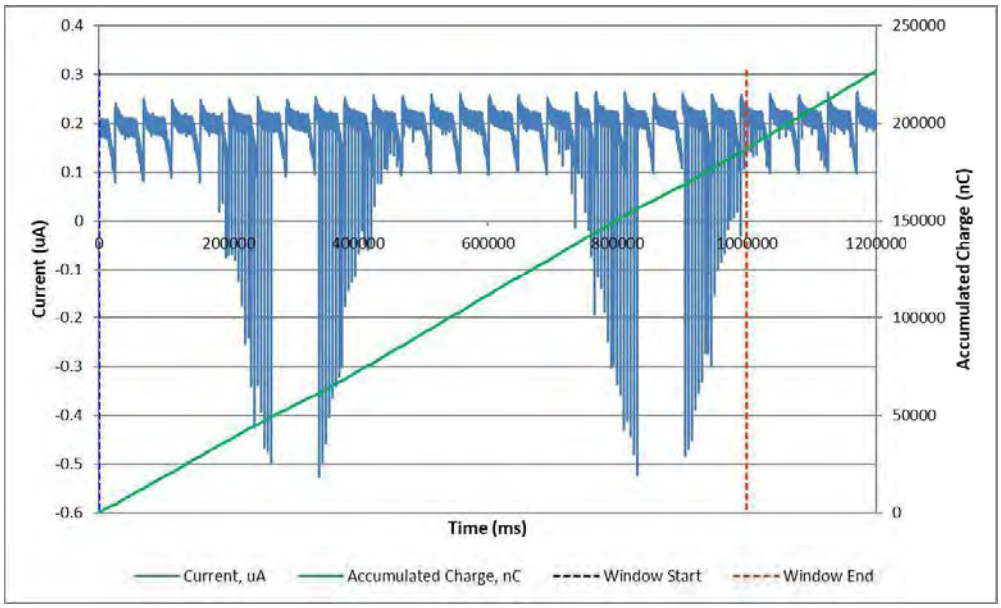
Current Measurement Plots



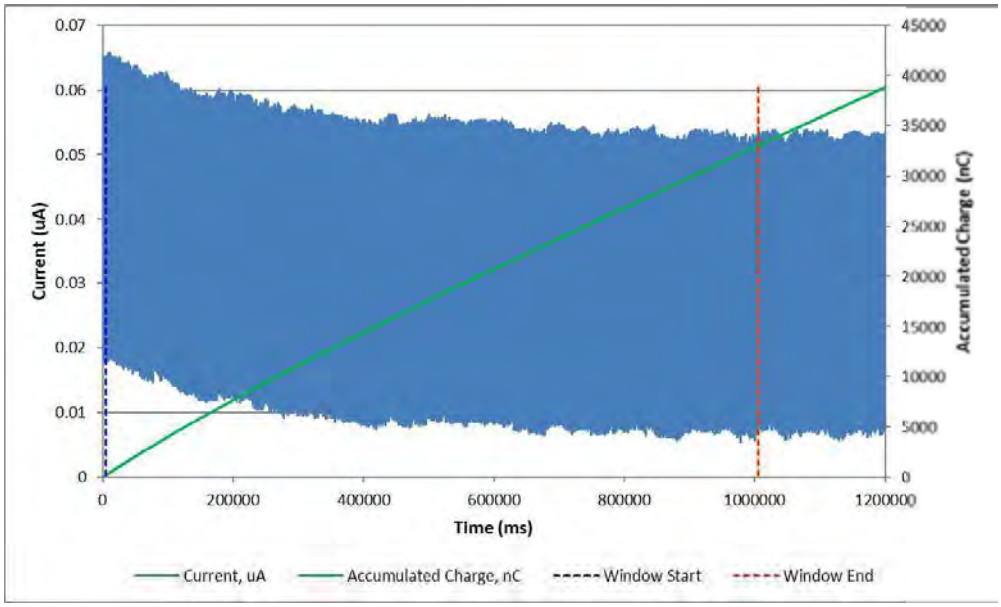
A1: OFF



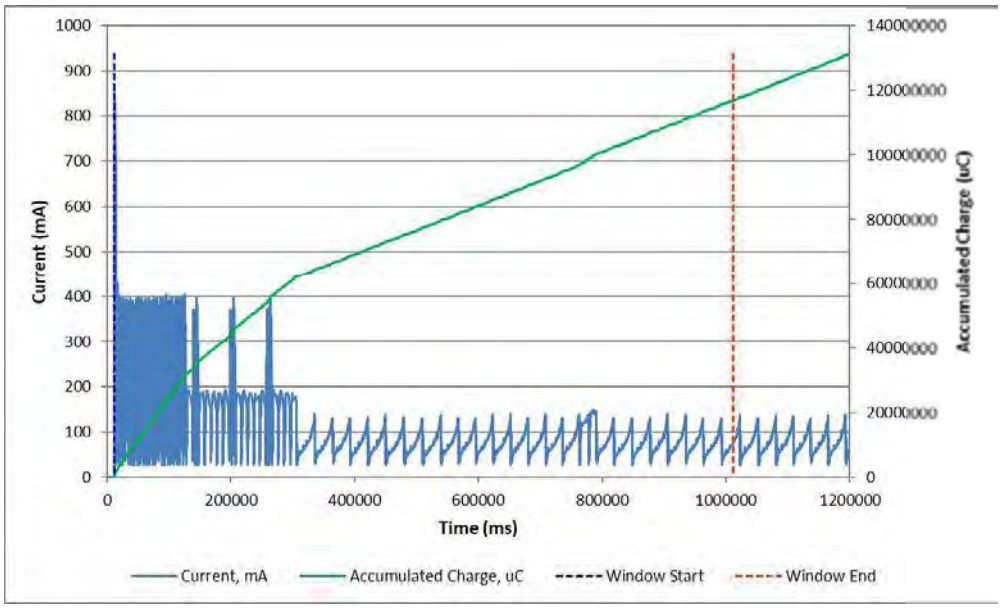
A2: ARMED disabled mode (including periodic EBIT)



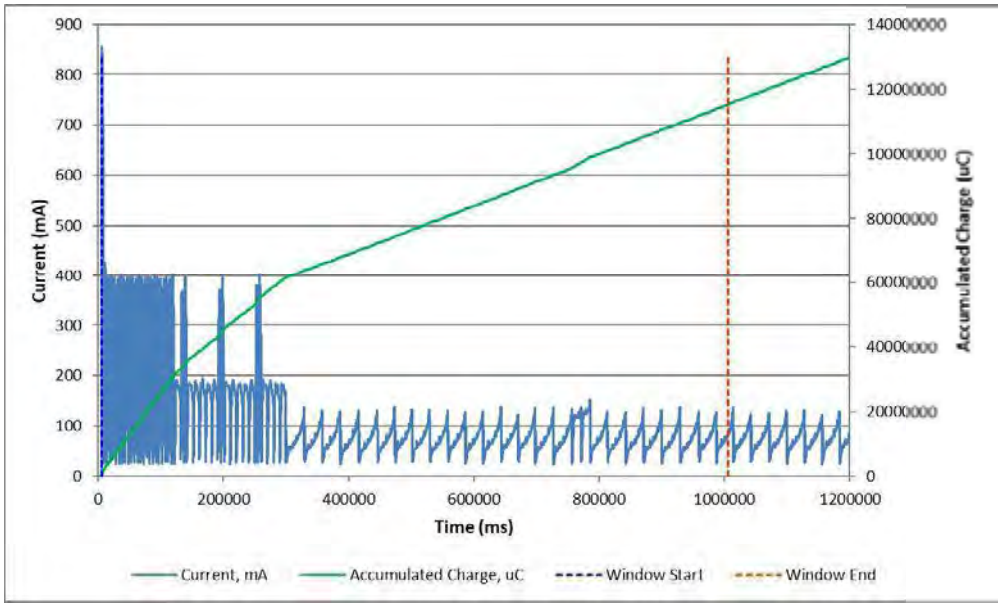
A3: ARMED enabled mode



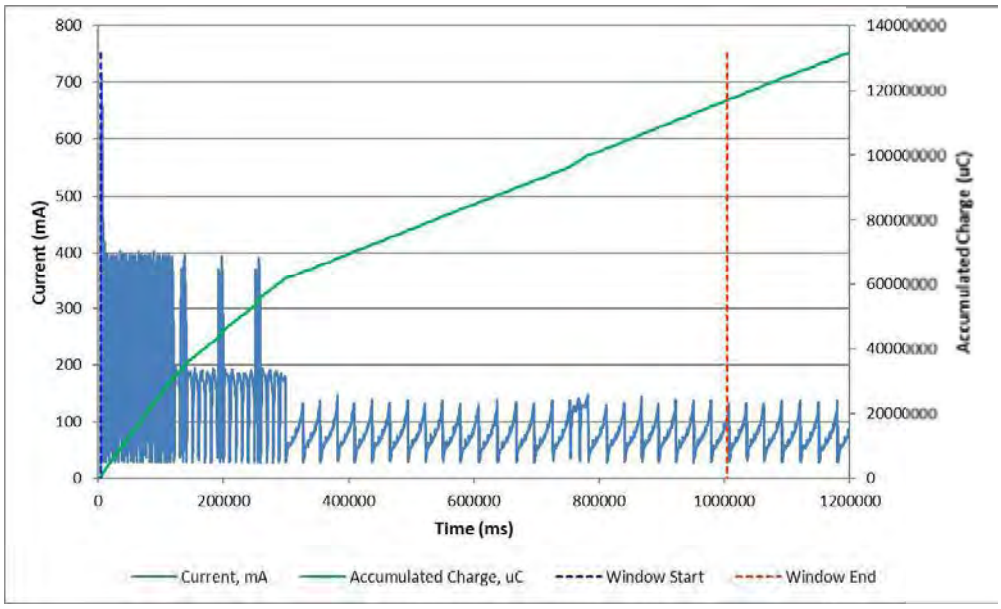
A4: ARMED – WITHOUT 28V supply



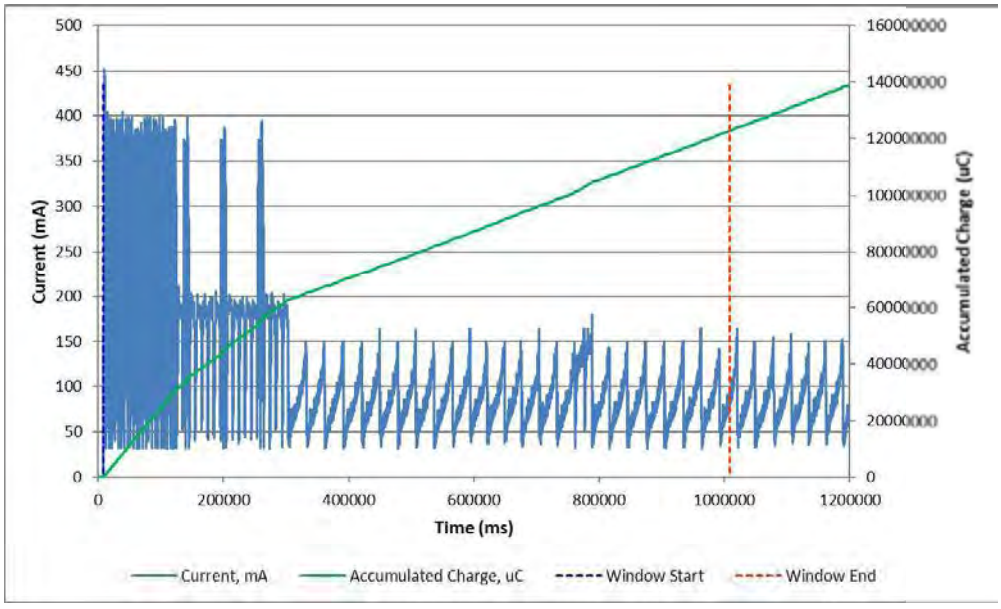
A5: EUT activation from ARINC429 Interface (label 202) ONLY 406MHz (T0 to T1 = T0+6h10) - NO GNSS SIGNAL



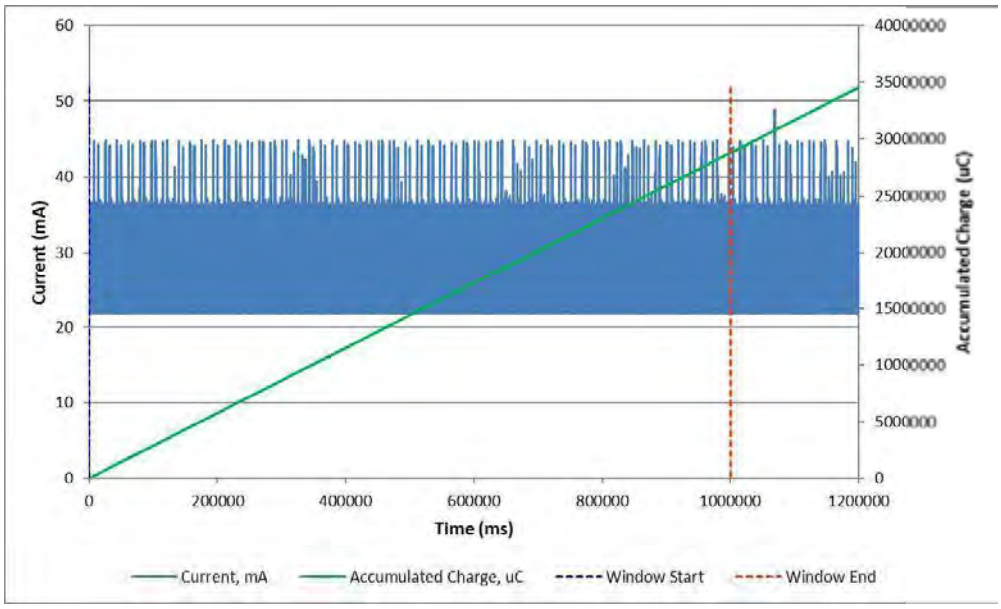
A6: EUT activation from ARINC429 Interface (label 202) ONLY 406MHz (T0 to T1 = T0+6h10) - GNSS SIGNAL



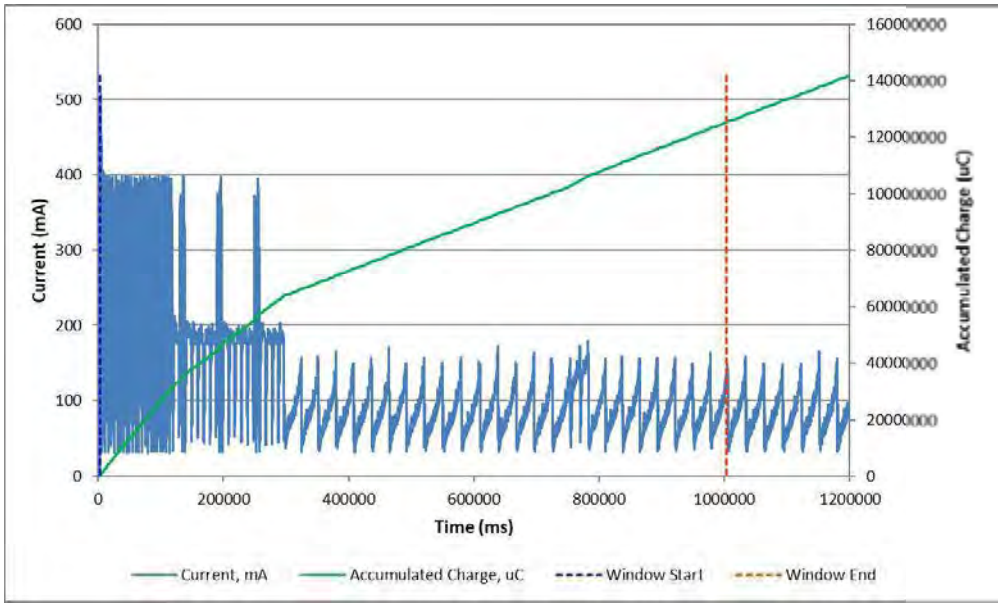
A7: EUT activation WITH 28V power supply loss ONLY 406MHz (T0 to T1 = T0+6h10) - NO GNSS SIGNAL



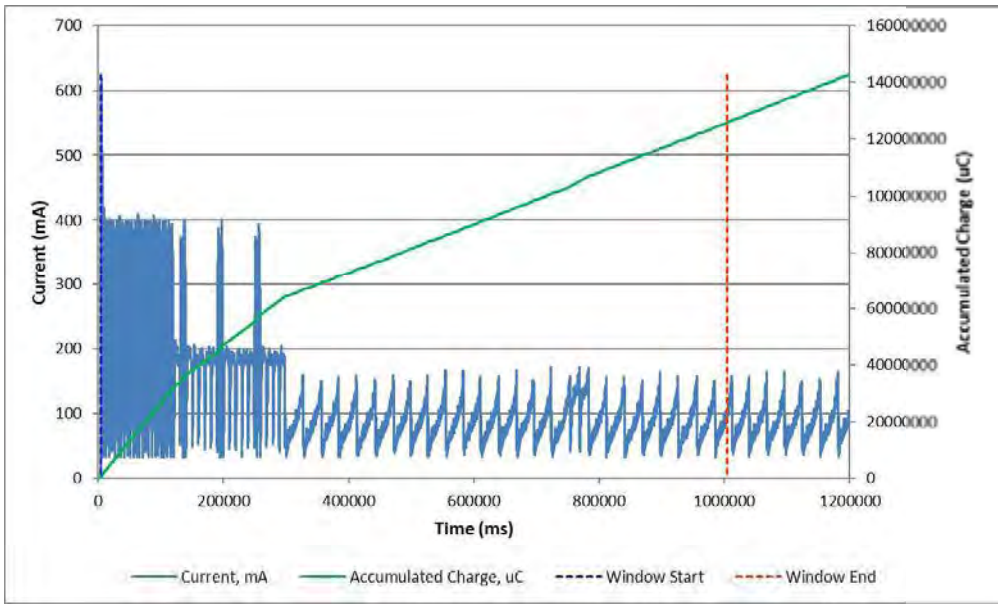
A8: EUT activation from Activation with Crash Sensor 406MHz + 121,5MHz - NO GNSS SIGNAL



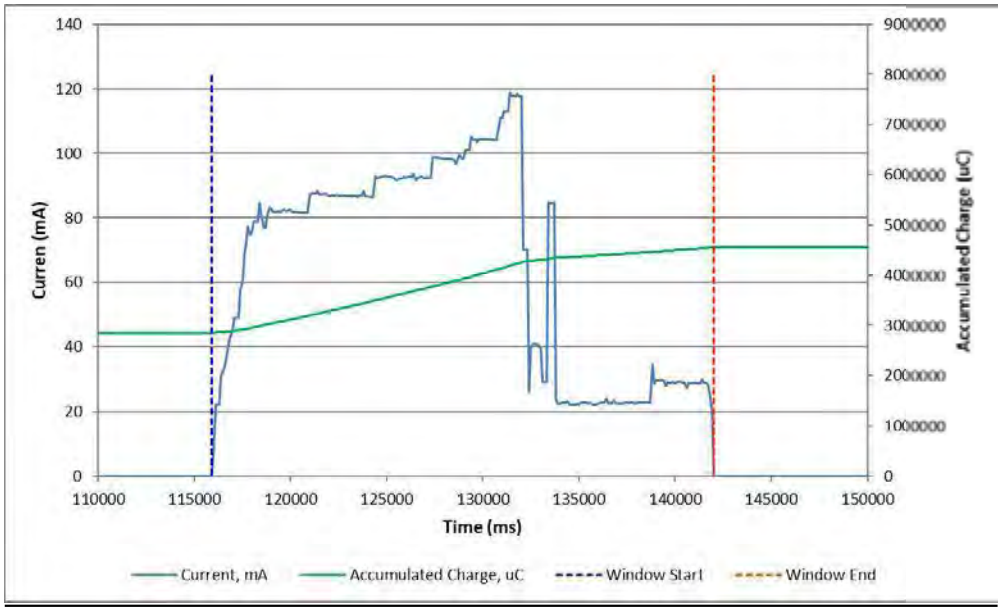
A9: EUT 121,5MHz after 24hours of beacon operation - NO GNSS SIGNAL



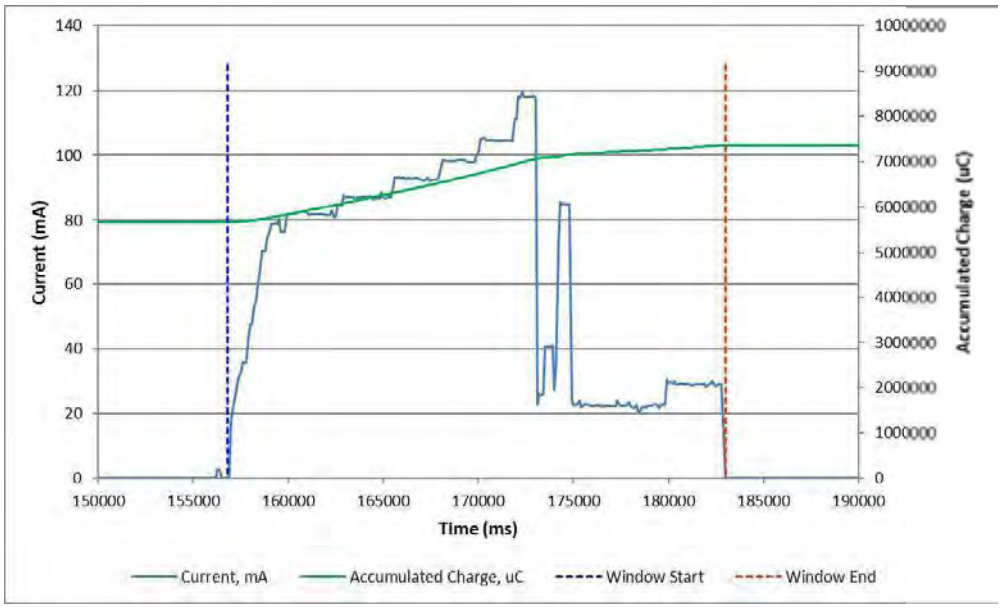
A10: EUT activation from beacon front panel control 406MHz + 121,5MHz - NO GNSS SIGNAL



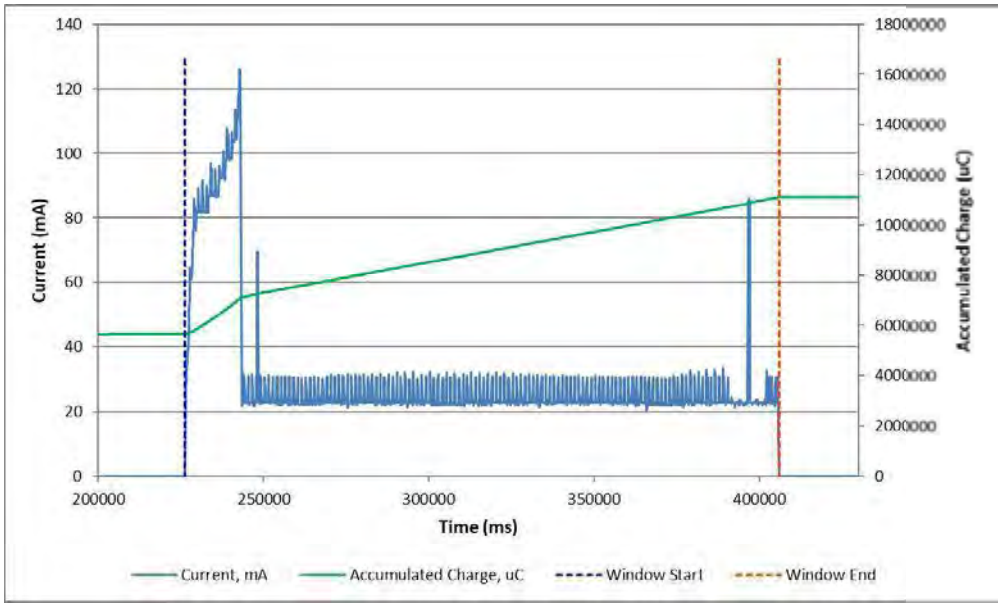
A11: EUT activation from Remote Control Panel (RC820) 406MHz + 121,5MHz - NO GNSS SIGNAL



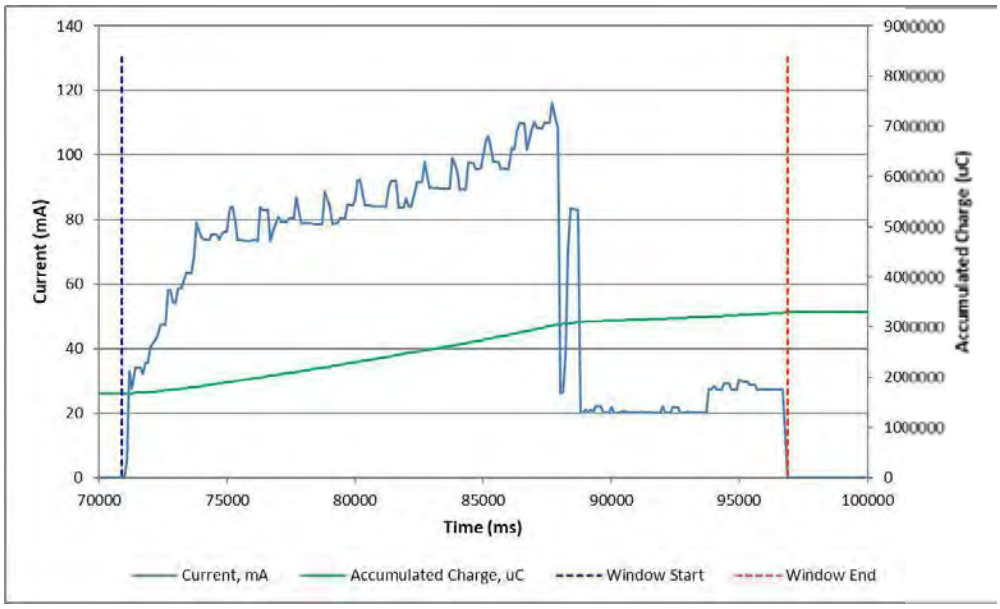
A12: Self-test activation from beacon front panel control



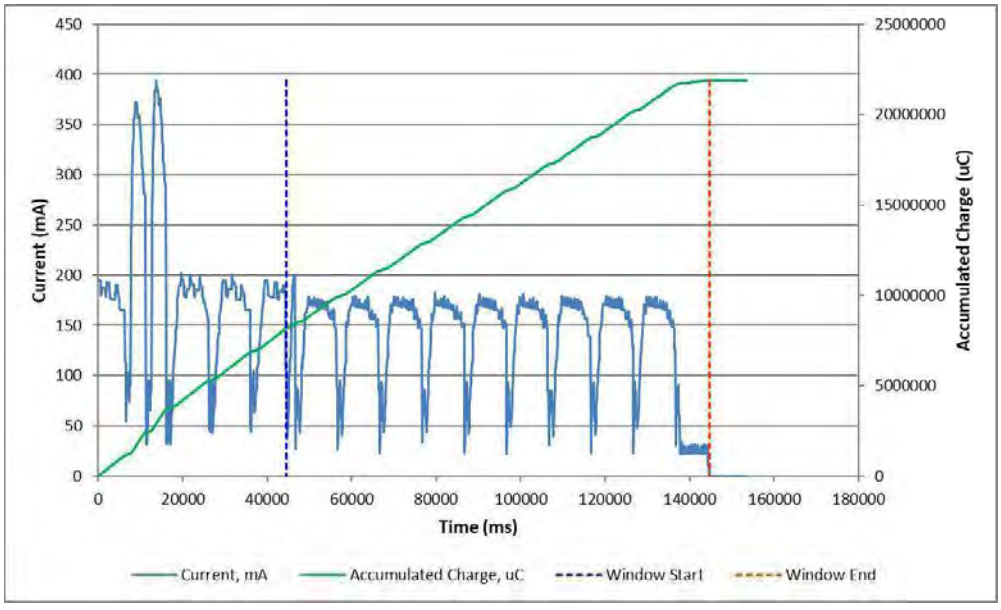
A13: Self-test from beacon from Remote Control Panel (RC820)



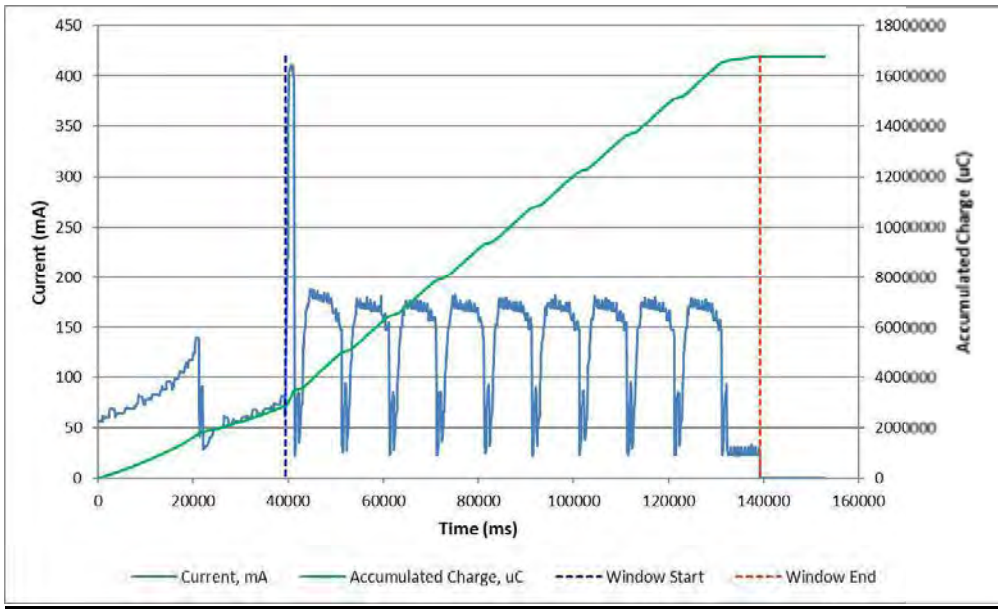
A15: GNSS Self-test from beacon front panel control – NO GNSS SIGNAL



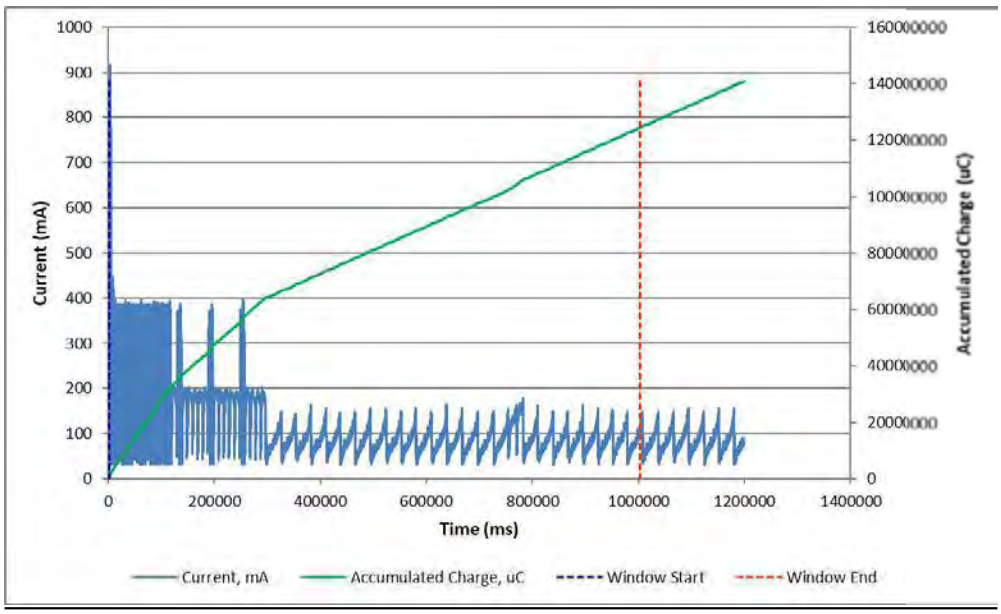
A16: GNSS Self-test from beacon front panel control – GNSS SIGNAL



A17: Cancellation message from beacon front panel control (after EUT activation from beacon front panel control)



A18: Cancellation message from ARINC429 Interface (label 202) (after EUT activation from ARINC429 Interface (label 202))



A19: EUT activation from beacon front panel control 406MHz + 121,5MHz - NO GNSS SIGNAL and REMOVING 28V just after beacon manual activation

Battery Conditioning Calculations

As per C/S T.007 Table F-E.2:

Characteristic	Designation	Units	Value	Comments
Beacon manufacturers declared maximum allowed cell shelf-life (from date of cell manufacture to date of battery pack installation in the beacon)	T_{CS} or TCS	Years	4	
Declared beacon battery replacement period (from date of installation in the beacon to expiry date marked on the beacon)	T_{BR} or TBR	Years	5	
Battery pack electrical configuration	-	-	Lithium Manganese Dioxide	
Cell model and cell chemistry	-	-	2 parallel of 4 in series	
Nominal cell capacity	-	Ah	3	
Nominal battery pack capacity	C_{BN}	Ah	6	
Annual battery cell capacity loss (self-discharge) due to aging, as specified by cell manufacturer at ambient temperature	$L_{SDC}1$	%	2	
Calculated battery pack capacity loss due to self-discharge: $L_{CBN} = C_{BN} - [C_{BN} * (1 - L_{SDC} /100)^{TBR+TCS}]$	$L_{CBN}1$	Ah	0.1200	
Annual battery cell capacity loss (self-discharge) due to aging, as specified by cell manufacturer at ambient temperature	L_{SDC2}	%	1	
Calculated battery pack capacity loss due to self-discharge: LCBN_2 = (CBN - LCBN_1) - [(CBN - LCBN_1) *(1 - LSDC_2 /100) ^ (TBR + TCS - 1)]	L_{CBN2}		0.4543	
Number of self-tests per year	N_{ST}	-	12	
Average battery current during a self-test	I_{ST}	mA	64.98	
Maximum duration of a self-test	T_{ST}	s	32	Manufacturer declared value
Calculated battery pack capacity loss due to self-tests during battery replacement period: $L_{ST} = I_{ST} * T_{ST} * T_{BR} * (N_{ST} / 3600)$	L_{ST}	mAh	34.66	
Maximum Number of GNSS self-tests between battery replacements	N_{GST}	-	60	
Average battery current during a GNSS self-test of maximum duration	I_{GST}	mA	30.38	
Maximum duration of a GNSS self-test	T_{GST}	s	190	Manufacturer declared value
Calculated battery pack capacity loss due to GNSS self-tests during battery replacement period: $L_{GST} = I_{GST} * T_{GST} * (N_{GST} / 3600)$	L_{GST}	mAh	96.20333333	
Average stand-by battery pack current	I_{SB}	mA	0.000195	
Other Capacity Losses	L_{OTH}	mAh		
Battery pack capacity loss due to constant operation of circuitry prior to beacon activation: $L_{ISB} = I_{SB} * T_{BR} * 8760$	L_{ISB}	mAh	8.5410	
Calculated value of the battery pack pre-test discharge $L_{CDC} = L_{CBN} + L_{CBN2} + 1.65((L_{ST} + L_{GST} + L_{ISB})/1000) + (L_{OTH}/1000)$	L_{CDC}	Ah	0.8043	

Battery Conditioning Results

A fresh battery was used for the test; it was discharged over a resistor for the pre-test discharge duration calculated as follows:

Pre-test discharge (L_{CDC}) [mAh]	=	803.7
Current Drawn [mA]	=	94
Pre-test discharge duration [h]	=	$\frac{803.7}{94}$
Pre-test discharge duration [h]	=	8.55

The actual discharge duration was 7.62 h resulting in a discharge of 716 mAh: an under-test of 10.98 %.

The discharge figure used for the Operating Lifetime test required an additional 88.3mAh (804.3 - 716). The average current draw once the 406 MHz transmissions ceased was measured as 28.78mA.
Therefore, 88.3 / 28.78 = 3.07 hours. This can be deducted from the overall duration: 67.63 – 3.07 = 64.56 hours.

Summary

The EUT complies with clause A.2.3 of Cospas-Sarsat T.007.