Communication Message Standards 2017

For C1 – C6 create class which inherits (INHERITS\_ABSPACKET or comnet::AbstractPacket) as a base class. Make sure you create pack and unpack which is designed like a stack (First in First out) Try to make one file per class.

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| **#1000 Vehicle Identification** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Vehicle\_ID | uint\_16 |  |
| 3 | 1 | Vehicle\_Type | uint\_8 | enum |
|  |  |  |  |  |
| **#1001 Vehicle Authorization Request** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Vehicle\_ID | uint\_16 |  |
| 3 | 2 | vehicle\_type | uint\_8 | key |
| 4 | 2 | authorized\_services | uint\_8 | enum |
| 5 | 2 | granted\_services | uint\_8 | enum |
|  |  |  |  |  |
| **#1002 Vehicle Authorization reply** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Vehicle\_ID | uint\_16 |  |
| 3 | 1 | Vehicle\_Type | uint\_8 | enum |
| 4 | 2 | Authorized\_Services | uint\_8 | enum |
| 5 | 2 | Granted\_Services | uint\_8 | enum |

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| **#1003 Vehicle Mode Command** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Vehicle\_ID | uint\_16 |  |
| 3 | 2 | Vehicle\_Mode | uint\_8 | enum |
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| **#1005 Vehicle Termination Command** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 2 | Vehicle\_ID | uint\_16 |  |
| 3 | 3 | Termination\_Mode | uint\_8 | enum |
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|  |  |  |  |  |
| **#1006 Vehicle Telemetry Command** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 2 | Vehicle\_ID | uint\_16 |  |
| 3 | 3 | Telemetry\_Select | uint\_8 | enum |
| 4 | 4 | Telemetry\_Rate | uint\_8 | ms |

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| **#2000 Vehicle System Status** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Vehicle\_ID | uint\_16 |  |
| 3 | 2 | Vehicle\_Mode | uint\_8 | enum |
| 4 | 2 | Vehicle\_State | uint\_8 | enum |
|  |  |  |  |  |
| **#2001 Vehicle Inertial State** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Vehicle\_ID | uint\_16 |  |
| 3 | 2 | Latitude | float\_64 | rad |
| 4 | 2 | Longitude | float\_64 | rad |
| 5 | 2 | Altitude | float\_32 | m |
| 6 | 2 | Roll | float\_32 | rad |
| 7 | 2 | Pitch | float\_32 | rad |
| 8 | 2 | Heading | float\_32 | rad |
| 9 | 3 | North\_Speed | float\_32 | m/s |
| 10 | 3 | East\_Speed | float\_32 | m/s |
| 11 | 3 | Vertical\_Speed | float\_32 | m/s |
| 12 | 3 | Roll\_Rate | float\_32 | rad/s |
| 13 | 3 | Pitch\_Rate | float\_32 | rad/s |
| 14 | 3 | Yaw\_Rate | float\_32 | rad/s |
| 15 | 4 | North\_Accel | float\_32 | m/s2 |
| 16 | 4 | East\_Accel | float\_32 | m/s2 |
| 17 | 4 | Vertical\_Accel | float\_32 | m/s2 |

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| **#2002 Vehicle Global Position** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Vehicle\_ID | uint\_16 |  |
| 3 | 2 | Latitude | int\_32 | Lat\*1E7 |
| 4 | 2 | Longitude | int\_32 | Lon\*1E7 |
| 5 | 2 | Altitude | int\_32 | mm |
| 6 | 3 | X\_Speed | int\_16 | m/s\*100 |
| 7 | 3 | Y\_Speed | int\_16 | m/s\*100 |
| 8 | 3 | Z\_Speed | int\_16 | m/s\*100 |
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| **#2003 Vehicle Body Sensed State** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Vehicle\_ID | uint\_16 |  |
| 3 | 2 | X\_Accel | int\_16 | g/1000 |
| 4 | 2 | Y\_Accel | int\_16 | g/1000 |
| 5 | 2 | Z\_Accel | int\_16 | g/1000 |
| 6 | 3 | Roll\_Rate | int\_16 | millirad/s |
| 7 | 3 | Pitch\_Rate | int\_16 | millirad/s |
| 8 | 3 | Yaw\_Rate | int\_16 | millirad/s |
|  |  |  |  |  |
| **#2004 Vehicle Attitude** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Vehicle\_ID | uint\_16 |  |
| 3 | 2 | Roll | float\_32 | rad |
| 4 | 2 | Pitch | float\_32 | rad |
| 5 | 2 | Yaw | float\_32 | rad |

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| **#2005 Air Vehicle Ground Relative State** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Vehicle\_ID | uint\_16 |  |
| 3 | 2 | Angle\_of\_Attack | float\_32 | rad |
| 4 | 2 | Angle\_of\_Sideslip | float\_32 | rad |
| 5 | 2 | True\_Airspeed | float\_32 | m/s |
| 6 | 2 | Indicated\_Airspeed | float\_32 | m/s |
| 7 | 3 | North\_Wind\_Speed | float\_32 | m/s |
| 8 | 3 | East\_Wind\_Speed | float\_32 | m/s |
| 9 | 3 | North\_Ground\_Speed | float\_32 | m/s |
| 10 | 3 | East\_Ground\_Speed | float\_32 | m/s |
| 11 | 4 | Barometric\_Pressure | float\_32 | Pascal |
| 12 | 4 | Barometric\_Altitude | float\_32 | m |

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| **#2006 Vehicle Waypoint Command** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Vehicle\_ID | uint\_16 |  |
| 3 | 2 | Latitude | float\_32 | rad |
| 4 | 2 | Longitude | float\_32 | rad |
| 5 | 2 | Altitude | float\_32 | m |
|  |  |  |  |  |
|  |  |  |  |  |
| **#6003 Battery** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 2 | Battery\_Percentage | uint\_32 | enum |

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| **#5000 Target Status** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 2 | Target\_Radius | float\_64 | km |
| 3 | 2 | Target\_Angle | float\_64 | degrees |
| 4 | 2 | Target\_Altitude | float\_64 | m |
|  |  |  |  |  |
| **#5001 Target Acknowledgement** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| 2 | 1 | Target\_Status | uint\_8 | enum |
|  |  |  |  |  |
|  |  |  |  |  |
| **#5000 Target Designation Command** | | | | |
| **Field** | **Data Set** | **Description** | **Type** | **Units** |
| **1** | **1** | **dest\_id** | **uint6\_t** | **enum** |
| 3 | 2 | Vehicle\_ID | uint16\_t | enum |
| 4 | 3 | Payload\_ID | uint8\_t | enum |
| 5 | 4 | Target\_ID | uint8\_t | enum |
| 6 | 5 | target\_type | uint8\_t | enum |
| 7 | 6 | latitude | int32\_t | rad |
| 8 | 6 | longitude | int32\_t | rad |
| 9 | 6 | altitude | int32\_t | m |