

Standard Archive Format for Europe



GOCE Specialisation for Level 2 processing

Reference	PDGS-SAFE-GMV-GOCE-L2	issue 1	revision 1d
-----------	-----------------------	---------	-------------

Author(s)	GMV	date: 28/08/2014
-----------	-----	------------------

Reviewed by	European Space Agency (ESA)	date:
-------------	-----------------------------	-------

Approved by	date:
-------------	-------

ESRIN

*Via Galileo Galilei - Casella Postale 64 - 00044 Frascati - Italy
Tel. (39) 06 941801 - Fax (39) 06 94180 280*

Table of Contents

1.Introduction.....	13
1.1.Purpose and scope.....	13
1.2.Book organisation.....	13
1.3.Acronyms and Abbreviations.....	13
2.Target of preservation.....	14
3.Data Structures.....	15
3.1.Data Structures common to HDR files.....	15
3.1.1.Simple Types.....	15
3.1.1.1.ShortTimeType.....	15
3.1.1.2.LongTimeType.....	15
3.1.1.3.SizeType.....	15
3.1.2.Complex Types.....	16
3.1.2.1.FixedHeaderType.....	16
3.1.2.2.ValidityPeriodType.....	17
3.1.2.3.SourceType.....	17
3.1.2.4.MPHType.....	18
3.1.2.5.ProcessorType.....	20
3.1.2.6.TimeInformationType.....	20
3.1.2.7.SensingType.....	20
3.1.2.8.AbsOrbitType.....	21
3.2.Data Structures common to DBL files.....	21
4.EGG Specific Data Structures.....	22
4.1.Data Structures for file types in HDR format.....	22
4.1.1.EGG_NOM_2_HDR.....	22
4.1.1.1.Root Element.....	22
4.1.1.2.Complex Types.....	23
4.1.1.2.1.EGG_NOM_2_EEH_Type.....	23
4.1.1.2.2.EGG_NOM_2_VariableHeaderType.....	23
4.1.1.2.3.EGG_NOM_2_SPHType.....	23
4.1.1.2.4.Original_SourceType_EGG_NOM_2_SPHType.....	24
4.1.1.2.5.DSDsType.....	24
4.1.1.2.6.List_of_DSDsType.....	24
4.1.1.2.7.Time_InformationType_EGG_NOM_2.....	24
4.1.1.2.8.GPS_TimeType.....	24
4.1.1.2.9.Abs_Orbit.....	25
4.1.1.2.10.Data_Set_DescriptorType.....	25
4.1.1.2.11.SpecificType_EGG_NOM_2.....	25
4.1.1.2.12.Original_SourceType_EGG_NOM_2.....	26
4.1.1.2.13.FormatType.....	26
4.1.1.2.14.InputType.....	26
4.1.2.EGG_TRF_2_HDR.....	26
4.1.2.1.Root Element.....	27
4.1.2.2.Complex Types.....	28
4.1.2.2.1.EGG_TRF_2_EEH_Type.....	28
4.1.2.2.2.EGG_TRF_2_VariableHeaderType.....	28
4.1.2.2.3.EGG_TRF_2_SPHType.....	28
4.1.2.2.4.Original_SourceType_EGG_TRF_2.....	28
4.1.2.2.5.Time_InformationType.....	28
4.1.2.2.6.DSDsType.....	29

4.1.2.2.7.GPS_TimeType.....	29
4.1.2.2.8.Abs_OrbitType.....	29
4.1.2.2.9.List_of_DSDsType.....	29
4.1.2.2.10.Data_Set_DescriptorType.....	30
4.1.2.2.11.SpecificType_EGG_TRF_2.....	30
4.1.2.2.12.Original_Source_EGG_TRF_2.....	31
4.1.2.2.13.FormatType.....	31
4.1.2.2.14.InputType.....	31
4.1.3.EGM_GOC_2_HDR.....	31
4.1.3.1.Root Element.....	32
4.1.3.2.Complex Types.....	33
4.1.3.2.1.EGM_GOC_2_EEH_Type.....	33
4.1.3.2.2.EGM_GOC_2_VariableHeaderType.....	33
4.1.3.2.3.EGM_GOC_2_SPHType.....	33
4.1.3.2.4.Original_SourceType_EGM_GOC_2.....	33
4.1.3.2.5.Time_InformationType.....	33
4.1.3.2.6.GPS_TimeType.....	34
4.1.3.2.7.Abs_OrbitType.....	34
4.1.3.2.8.DSDsType.....	34
4.1.3.2.9.List_of_DSDsType.....	34
4.1.3.2.10.Data_Set_DescriptorType.....	34
4.1.3.2.11.EGM_GOC_2_SpecificType.....	35
4.1.3.2.12.EGM_GAN_2Type.....	35
4.1.3.2.13.Original_SourceType_EGM_GAN_2.....	35
4.1.3.2.14.FormatType_EGM_GAN_2.....	36
4.1.3.2.15.FlagsType_EGM_GAN_2.....	36
4.1.3.2.16.EGM_GRP_2Type.....	36
4.1.3.2.17.Original_SourceType_EGM_GRP_2.....	36
4.1.3.2.18.FormatType_EGM_GRP_2.....	36
4.1.3.2.19.EGM_GEO_2Type.....	37
4.1.3.2.20.Original_SourceType_EGM_GEO_2.....	37
4.1.3.2.21.FormatType_EGM_GEO_2.....	37
4.1.3.2.22.FlagsType_EGM_GEO_2.....	37
4.1.3.2.23.EGM_GVN_2Type.....	38
4.1.3.2.24.Original_SourceType_EGM_GVN_2.....	38
4.1.3.2.25.FormatType_EGM_GVN_2.....	38
4.1.3.2.26.FlagsType_EGM_GVN_2.....	38
4.1.3.2.27.EGM_GVE_2Type.....	39
4.1.3.2.28.Original_SourceType_EGM_GVE_2.....	39
4.1.3.2.29.FormatType_EGM_GVE_2.....	39
4.1.3.2.30.FlagsType_EGM_GVE_2.....	39
4.1.3.2.31.EGM_GER_2Type.....	40
4.1.3.2.32.Original_SourceType_EGM_GER_2.....	40
4.1.3.2.33.FormatType_EGM_GER_2.....	40
4.1.3.2.34.FlagsType_EGM_GER_2.....	40
4.1.3.2.35.EGM_GCF_2Type.....	41
4.1.3.2.36.Original_SourceType_EGM_GCF_2.....	41
4.1.3.2.37.Spherical_Harmonic_DevelopmentType.....	41
4.1.3.2.38.FormatType_EGM_GCF_2.....	41
4.1.3.2.39.Coordinate_InformationType.....	41
4.1.3.2.40.Coordinate_InformationType_LatitudeType.....	42

4.1.3.2.41.Coordinate_InformationType_LongitudeType.....	42
4.1.3.2.42.Northern_BorderType.....	42
4.1.3.2.43.Southern_BorderType.....	42
4.1.3.2.44.Western_BorderType.....	43
4.1.3.2.45.Eastern_BorderType.....	43
4.1.3.2.46.Cell_InformationType.....	43
4.1.3.2.47.Cell_InformationType_SizeType.....	43
4.1.3.2.48.Data_InformationType.....	43
4.2.Data Structures for file types in DBL format.....	44
4.2.1.EGG_NOM_2_DBL.....	44
4.2.1.1.Root Element.....	44
4.2.1.2.Simple Types.....	45
4.2.1.2.1.FlagsCoordFormatType.....	45
4.2.1.3.Complex Types.....	45
4.2.1.3.1.Data_Block_EGG_NOM_2_Type.....	45
4.2.1.3.2.Data_Block_EGG_NOM_2_List_Type.....	45
4.2.1.3.3.List_of_GG_time_RecordsType.....	45
4.2.1.3.4.GG_time_RecordType.....	45
4.2.1.3.5.Time_InformationType_EGG_NOM_2.....	46
4.2.1.3.6.CorrectionsType.....	46
4.2.1.3.7.TemporalType.....	46
4.2.1.3.8.QuaternionsType.....	46
4.2.1.3.9.TidalType.....	46
4.2.1.3.10.XX_YZ_doubleType.....	47
4.2.1.3.11.FlagsType.....	47
4.2.2.EGG_TRF_2_DBL.....	48
4.2.2.1.Root Element.....	48
4.2.2.2.Simple Types.....	49
4.2.2.2.1.FlagsCoordFormatType.....	49
4.2.2.3.Complex Types.....	49
4.2.2.3.1.Data_Block_EGG_TRF_2_Type.....	49
4.2.2.3.2.Data_Block_EGG_TRF_2_List_Type.....	49
4.2.2.3.3.List_of_GG_spatial_RecordsType.....	49
4.2.2.3.4.GG_spatial_RecordType.....	49
4.2.2.3.5.Time_InformationType.....	49
4.2.2.3.6.PositionType.....	50
4.2.2.3.7.Radius_from_GeocenterType.....	50
4.2.2.3.8.PhiType.....	50
4.2.2.3.9.LambdaType.....	50
4.2.2.3.10.XX_YZ_doubleType.....	50
4.2.2.3.11.FlagsType.....	51
4.2.3.EGM_GOC_2_DBL.....	51
4.2.3.1.Root Element.....	52
4.2.3.2.Complex Types.....	54
4.2.3.2.1.Data_Block_EGM_GOC_2_Type.....	54
4.2.3.2.2.Data_Block_EGM_GOC_2_List_Type.....	54
4.2.3.2.3.ListOfLatitudesType.....	54
4.2.3.2.4.List_of_LatitudesType.....	54
4.2.3.2.5.ListOfICGEMRecordsType.....	54
4.2.3.2.6.List_of_ICGEM_RecordsType.....	54
4.2.3.2.7.ICGEM_RecordType.....	55

4.2.3.2.8.SigmasType.....	55
4.2.3.2.9.ListOfPDFFilesType.....	55
4.2.3.3.List_of_PDF_Files_Type.....	55
4.2.3.3.1.PDF_FileType.....	55
4.2.3.3.2.LatitudeType.....	55
4.2.3.3.3.List_of_LongitudesType.....	56
4.2.3.3.4.LongitudeType.....	56
4.2.3.3.5.ValueType.....	56
5.SST Specific Data Structures.....	57
5.1.Data Structures for file types in HDR format.....	57
5.1.1.SST_PSO_2_HDR.....	57
5.1.1.1.Root Element.....	57
5.1.1.2.Complex Types.....	58
5.1.1.2.1.SST_PSO_2_EEH_Type.....	58
5.1.1.2.2.SST_PSO_2_VariableHeaderType.....	58
5.1.1.2.3.SST_PSO_2_SPHType.....	58
5.1.1.2.4.Original_SourceType_SST_PSO_2.....	59
5.1.1.2.5.Time_InformationType_SST_PSO_2.....	59
5.1.1.2.6.GPS_TimeType_SST_PSO_2.....	59
5.1.1.2.7.Abs_OrbitType.....	59
5.1.1.2.8.DSDsType.....	59
5.1.1.2.9.List_of_DSDsType.....	59
5.1.1.2.10.Data_Set_DescriptorType.....	60
5.1.1.2.11.SST_PSO_2_SpecificType.....	60
5.1.1.2.12.SST_PRP_2Type.....	60
5.1.1.2.13.Original_SourceType_SST_PRP_2.....	61
5.1.1.2.14.FormatType_SST_PRP_2.....	61
5.1.1.2.15.SST_PKI_2Type.....	61
5.1.1.2.16.Original_SourceTypeSST_PKI_2.....	61
5.1.1.2.17.FormatType_SST_PKI_2.....	62
5.1.1.2.18.Time_InformationType_SST_PKI_2.....	62
5.1.1.2.19.GPS_TimeType_SST_PKI_2.....	62
5.1.1.2.20.GPS_Time_StartType_SST_PKI_2.....	62
5.1.1.2.21.SST_PCV_2Type.....	62
5.1.1.2.22.Original_SourceType_SST_PCV_2.....	63
5.1.1.2.23.FormatType_SST_PCV_2.....	63
5.1.1.2.24.Var_Cov_MatrixType.....	63
5.1.1.2.25.Corresponding_Kinematic_OrbitType.....	63
5.1.1.2.26.Time_InformationType_SST_PCV_2.....	63
5.1.1.2.27.Time_Step_SizeType.....	63
5.1.1.2.28.GPS_TimeType.....	64
5.1.1.2.29.SST_PRD_2Type.....	64
5.1.1.2.30.Original_SourceType_SST_PRD_2.....	64
5.1.1.2.31.FormatType_SST_PRD_2.....	64
5.1.1.2.32.Time_InformationType_SST_PRD_2.....	65
5.1.1.2.33.GPS_Time_SST_PRD_2.....	65
5.1.1.2.34.GPS_Time_Start_SST_PRD_2.....	65
5.1.1.2.35.GPSType.....	65
5.1.1.2.36.Mod_Jul_DayType.....	65
5.1.1.2.37.Epoch_InformationType.....	66
5.1.1.2.38.List_of_Satellite_DescriptorsType.....	66

5.1.1.2.39.Satellite_DescriptorType.....	66
5.1.1.2.40.SST_PRM_2Type.....	66
5.1.1.2.41.Original_SourceType_SST_PRM_2.....	66
5.1.1.2.42.FormatType_SST_PRM_2.....	67
5.1.1.2.43.TransformationType.....	67
5.1.1.2.44.Time_InformationType_SST_PRM_2.....	67
5.1.1.2.45.GPS_TimeType_SST_PRM_2.....	67
5.1.1.2.46.GPS_Time_StartType.....	67
5.1.1.2.47.Epoch_InformationReferenceType.....	68
5.1.1.2.48.NutationType.....	68
5.1.1.2.49.GregorianType.....	68
5.2.Data Structures for file types in DBL format.....	68
5.2.1.SST_PSO_2_DBL.....	68
5.2.1.1.Root Element.....	69
5.2.1.2.Complex Types.....	69
5.2.1.2.1.Data_Block_SST_PSO_2_Type.....	69
5.2.1.2.2.Data_Block_SST_PSO_2_List_Type.....	70
5.2.1.2.3.ListOfCovarianceRecordsType.....	70
5.2.1.2.4.List_of_Covariance_RecordsType.....	70
5.2.1.2.5.Covariance_RecordType.....	70
5.2.1.2.6.ListOfSP3cRecordsType.....	70
5.2.1.2.7.List_of_SP3c_RecordsType.....	71
5.2.1.2.8.SP3c_RecordType.....	71
5.2.1.2.9.Time_InformationType.....	71
5.2.1.2.10.GPS_TimeType.....	71
5.2.1.2.11.GPS_Time_StartType.....	71
5.2.1.2.12.GregorianType.....	71
5.2.1.2.13.List_of_Satellite_IDsType.....	71
5.2.1.2.14.L15Type.....	72
5.2.1.2.15.L15_PositionType.....	72
5.2.1.2.16.L15_VelocityType.....	72
5.2.1.2.17.Standard_DeviationsType.....	72
5.2.1.2.18.PositionType.....	72
5.2.1.2.19.VelocityType.....	73
5.2.1.2.20.ClockType.....	73
5.2.1.2.21.Clock_Change_RateType.....	73
5.2.1.2.22.ListOfRotationRecordsType.....	73
5.2.1.2.23.List_of_Rotation_RecordsType.....	73
5.2.1.2.24.Rotation_RecordType.....	74
5.2.1.2.25.Rotation_Time_InformationType.....	74
5.2.1.2.26.Time_Since_Reference_EpochType.....	74
5.2.1.2.27.QuaternionsType.....	74
5.2.1.2.28.ListOfPDFFilesType.....	74
5.2.1.2.29.List_of_PDF_FilesType.....	74
5.2.1.2.30.PDF_FileType.....	75

List of Tables

Table 1: Product Types Specification Index.....	14
Table 2: ShortTimeType Specification.....	15
Table 3: LongTimeType Specification.....	15
Table 4: SizeType Specification.....	15
Table 5: FixedHeaderType Specification.....	17
Table 6: ValidityPeriodType Specification.....	17
Table 7: SourceType Specification.....	18
Table 8: MPHType Specification.....	20
Table 9: ProcessorType Specification.....	20
Table 10: TimeInformationType Specification.....	20
Table 11: SensingType Specification.....	21
Table 12: AbsOrbitType Specification.....	21
Table 13: Earth_Explorer_Header Specification.....	23
Table 14: EGG_NOM_2_EEH_Type Specification.....	23
Table 15: EGG_NOM_2_VariableHeaderType Specification.....	23
Table 16: EGG_NOM_2_SPHType Specification.....	23
Table 17: Original_SourceType_EGG_NOM_2_SPHType Specification.....	24
Table 18: DSDsType Specification.....	24
Table 19: List_of_DSDsType Specification.....	24
Table 20: Time_InformationType_EGG_NOM_2 Specification.....	24
Table 21: GPS_TimeType Specification.....	25
Table 22: Abs_Orbit Specification.....	25
Table 23: Data_Set_DescriptorType Specification.....	25
Table 24: SpecificType_EGG_NOM_2 Specification.....	26
Table 25: Original_SourceType_EGG_NOM_2 Specification.....	26
Table 26: FormatType Specification.....	26
Table 27: InputType Specification.....	26
Table 28: Earth_Explorer_Header Specification.....	28
Table 29: EGG_TRF_2_EEH_Type Specification.....	28
Table 30: EGG_TRF_2_VariableHeaderType Specification.....	28
Table 31: EGG_TRF_2_SPHType Specification.....	28
Table 32: Original_SourceType_EGG_TRF_2 Specification.....	28
Table 33: Time_InformationType Specification.....	29
Table 34: DSDsType Specification.....	29
Table 35: GPS_TimeType Specification.....	29
Table 36: Abs_OrbitType Specification.....	29
Table 37: List_of_DSDsType Specification.....	29
Table 38: Data_Set_DescriptorType Specification.....	30
Table 39: SpecificType_EGG_TRF_2 Specification.....	30
Table 40: Original_SourceType_EGG_TRF_2 Specification.....	31
Table 41: FormatType Specification.....	31
Table 42: InputType Specification.....	31
Table 43: Earth_Explorer_Header Specification.....	32
Table 44: EGM_GOC_2_EEH_Type Specification.....	33
Table 45: EGM_GOC_2_VariableHeaderType Specification.....	33
Table 46: EGM_GOC_2_SPHType Specification.....	33
Table 47: Original_SourceType_EGM_GOC_2 Specification.....	33

Table 48: Time_InformationType Specification.....	33
Table 49: GPS_TimeType Specification.....	34
Table 50: Abs_OrbitType Specification.....	34
Table 51: DSDsType Specification.....	34
Table 52: List_of_DSDsType Specification.....	34
Table 53: Data_Set_DescriptorType Specification.....	35
Table 54: EGM_GOC_2_SpecificType Specification.....	35
Table 55: EGM_GAN_2Type Specification.....	35
Table 56: Original_SourceType_EGM_GAN_2 Specification.....	35
Table 57: FormatType_EGM_GAN_2 Specification.....	36
Table 58: FlagsType_EGM_GAN_2 Specification.....	36
Table 59: EGM_GRP_2Type Specification.....	36
Table 60: Original_SourceType_EGM_GRP_2 Specification.....	36
Table 61: FormatType_EGM_GRP_2 Specification.....	37
Table 62: EGM_GEO_2Type Specification.....	37
Table 63: Original_SourceType_EGM_GEO_2 Specification.....	37
Table 64: FormatType_EGM_GEO_2 Specification.....	37
Table 65: FlagsType_EGM_GEO_2 Specification.....	37
Table 66: EGM_GVN_2Type Specification.....	38
Table 67: Original_SourceType_EGM_GVN_2 Specification.....	38
Table 68: FormatType_EGM_GVN_2 Specification.....	38
Table 69: FlagsType_EGM_GVN_2 Specification.....	38
Table 70: EGM_GVE_2Type Specification.....	39
Table 71: Original_SourceType_EGM_GVE_2 Specification.....	39
Table 72: FormatType_EGM_GVE_2 Specification.....	39
Table 73: FlagsType_EGM_GVE_2 Specification.....	39
Table 74: EGM_GER_2Type Specification.....	40
Table 75: Original_SourceType_EGM_GER_2 Specification.....	40
Table 76: FormatType_EGM_GER_2 Specification.....	40
Table 77: FlagsType_EGM_GER_2 Specification.....	40
Table 78: EGM_GCF_2Type Specification.....	41
Table 79: Original_SourceType_EGM_GCF_2 Specification.....	41
Table 80: Spherical_Harmonic_DevelopmentType Specification.....	41
Table 81: FormatType_EGM_GCF_2 Specification.....	41
Table 82: Coordinate_InformationType Specification.....	42
Table 83: Coordinate_InformationType_LatitudeType Specification.....	42
Table 84: Coordinate_InformationType_LongitudeType Specification.....	42
Table 85: Northern_BorderType Specification.....	42
Table 86: Southern_BorderType Specification.....	42
Table 87: Western_BorderType Specification.....	43
Table 88: Eastern_BorderType Specification.....	43
Table 89: Cell_InformationType Specification.....	43
Table 90: Cell_InformationType_SizeType Specification.....	43
Table 91: Data_InformationType Specification.....	44
Table 92: Data_Block Specification.....	45
Table 93: FlagsCoordFormatType Specification.....	45
Table 94: Data_Block_EGG_NOM_2_Type Specification.....	45
Table 95: Data_Block_EGG_NOM_2_List_Type Specification.....	45
Table 96: List_of_GG_time_RecordsType Specification.....	45
Table 97: GG_time_RecordType Specification.....	46
Table 98: Time_InformationType_EGG_NOM_2 Specification.....	46

Table 99: CorrectionsType Specification.....	46
Table 100: TemporalType Specification.....	46
Table 101: QuaternionsType Specification.....	46
Table 102: TidalType Specification.....	47
Table 103: XX_YZ_doubleType Specification.....	47
Table 104: FlagsType Specification.....	47
Table 105: Data_Block Specification.....	48
Table 106: FlagsCoordFormatType Specification.....	49
Table 107: Data_Block_EGG_TRF_2_Type Specification.....	49
Table 108: Data_Block_EGG_TRF_2_List_Type Specification.....	49
Table 109: List_of_GG_spatial_RecordsType Specification.....	49
Table 110: GG_spatial_RecordType Specification.....	49
Table 111: Time_InformationType Specification.....	50
Table 112: PositionType Specification.....	50
Table 113: Radius_from_GeocenterType Specification.....	50
Table 114: PhiType Specification.....	50
Table 115: LambdaType Specification.....	50
Table 116: XX_YZ_doubleType Specification.....	51
Table 117: FlagsType Specification.....	51
Table 118: Data_Block Specification.....	53
Table 119: Data_Block_EGM_GOC_2_Type Specification.....	54
Table 120: Data_Block_EGM_GOC_2_List_Type Specification.....	54
Table 121: ListOfLatitudesType Specification.....	54
Table 122: List_of_LatitudesType Specification.....	54
Table 123: ListOfICGEMRecordsType Specification.....	54
Table 124: List_of_ICGEM_RecordsType Specification.....	55
Table 125: ICGEM_RecordType Specification.....	55
Table 126: SigmasType Specification.....	55
Table 127: ListOfPDFFilesType Specification.....	55
Table 128: List_of_PDF_Files_Type Specification.....	55
Table 129: PDF_FileType Specification.....	55
Table 130: LatitudeType Specification.....	56
Table 131: List_of_LongitudesType Specification.....	56
Table 132: LongitudeType Specification.....	56
Table 133: ValueType Specification.....	56
Table 134: Earth_Explorer_Header Specification.....	58
Table 135: SST_PSO_2_EEH_Type Specification.....	58
Table 136: SST_PSO_2_VariableHeaderType Specification.....	58
Table 137: SST_PSO_2_SPHType Specification.....	58
Table 138: Original_SourceType_SST_PSO_2 Specification.....	59
Table 139: Time_InformationType_SST_PSO_2 Specification.....	59
Table 140: GPS_TimeType_SST_PSO_2 Specification.....	59
Table 141: Abs_OrbitType Specification.....	59
Table 142: DSDsType Specification.....	59
Table 143: List_of_DSDsType Specification.....	60
Table 144: Data_Set_DescriptorType Specification.....	60
Table 145: SST_PSO_2_SpecificType Specification.....	60
Table 146: SST_PRP_2Type Specification.....	60
Table 147: Original_SourceType_SST_PRP_2 Specification.....	61
Table 148: FormatType_SST_PRP_2 Specification.....	61
Table 149: SST_PKI_2Type Specification.....	61

Table 150: Original_SourceTypeSST_PKI_2 Specification.....	61
Table 151: FormatType_SST_PKI_2 Specification.....	62
Table 152: Time_InformationType_SST_PKI_2 Specification.....	62
Table 153: GPS_TimeType_SST_PKI_2 Specification.....	62
Table 154: GPS_Time_StartType_SST_PKI_2 Specification.....	62
Table 155: SST_PCV_2Type Specification.....	62
Table 156: Original_SourceType_SST_PCV_2 Specification.....	63
Table 157: FormatType_SST_PCV_2 Specification.....	63
Table 158: Var_Cov_MatrixType Specification.....	63
Table 159: Corresponding_Kinematic_OrbitType Specification.....	63
Table 160: Time_InformationType_SST_PCV_2 Specification.....	63
Table 161: Time_Step_SizeType Specification.....	64
Table 162: GPS_TimeType Specification.....	64
Table 163: SST_PRD_2Type Specification.....	64
Table 164: Original_SourceType_SST_PRD_2 Specification.....	64
Table 165: FormatType_SST_PRD_2 Specification.....	65
Table 166: Time_InformationType_SST_PRD_2 Specification.....	65
Table 167: GPS_Time_SST_PRD_2 Specification.....	65
Table 168: GPS_Time_Start_SST_PRD_2 Specification.....	65
Table 169: GPSType Specification.....	65
Table 170: Mod_Jul_DayType Specification.....	65
Table 171: Epoch_InformationType Specification.....	66
Table 172: List_of_Satellite_DescriptorsType Specification.....	66
Table 173: Satellite_DescriptorType Specification.....	66
Table 174: SST_PRM_2Type Specification.....	66
Table 175: Original_SourceType_SST_PRM_2 Specification.....	67
Table 176: FormatType_SST_PRM_2 Specification.....	67
Table 177: TransformationType Specification.....	67
Table 178: Time_InformationType_SST_PRM_2 Specification.....	67
Table 179: GPS_TimeType_SST_PRM_2 Specification.....	67
Table 180: GPS_Time_StartType Specification.....	67
Table 181: Epoch_InformationReferenceType Specification.....	68
Table 182: NutationType Specification.....	68
Table 183: GregorianType Specification.....	68
Table 184: Data_Block Specification.....	69
Table 185: Data_Block_SST_PSO_2_Type Specification.....	69
Table 186: Data_Block_SST_PSO_2_List_Type Specification.....	70
Table 187: ListOfCovarianceRecordsType Specification.....	70
Table 188: List_of_Covariance_RecordsType Specification.....	70
Table 189: Covariance_RecordType Specification.....	70
Table 190: ListOfSP3cRecordsType Specification.....	70
Table 191: List_of_SP3c_RecordsType Specification.....	71
Table 192: SP3c_RecordType Specification.....	71
Table 193: Time_InformationType Specification.....	71
Table 194: GPS_TimeType Specification.....	71
Table 195: GPS_Time_StartType Specification.....	71
Table 196: GregorianType Specification.....	71
Table 197: List_of_Satellite_IDsType Specification.....	71
Table 198: L15Type Specification.....	72
Table 199: L15_PositionType Specification.....	72
Table 200: L15_VelocityType Specification.....	72



Table 201: Standard_DeviationsType Specification.....	72
Table 202: PositionType Specification.....	73
Table 203: VelocityType Specification.....	73
Table 204: ClockType Specification.....	73
Table 205: Clock_Change_RateType Specification.....	73
Table 206: ListOfRotationRecordsType Specification.....	73
Table 207: List_of_Rotation_RecordsType Specification.....	74
Table 208: Rotation_RecordType Specification.....	74
Table 209: Rotation_Time_InformationType Specification.....	74
Table 210: Time_Since_Reference_EpochType Specification.....	74
Table 211: QuaternionsType Specification.....	74
Table 212: ListOfPDFFilesType Specification.....	74
Table 213: List_of_PDF_FilesType Specification.....	75
Table 214: PDF_FileType Specification.....	75

List of Figures

Figure 1: EGG_NOM_2_HDR organisation overview.....	22
Figure 2: EGG_TRF_2_HDR organisation overview.....	27
Figure 3: EGM_GOC_2_HDR organisation overview.....	32
Figure 4: EGG_NOM_2_DBL organisation overview.....	44
Figure 5: EGG_TRF_2_DBL organisation overview.....	48
Figure 6: EGM_GOC_2_DBL organisation overview.....	52
Figure 7: SST_PSO_2_HDR organisation overview.....	57
Figure 8: SST_PSO_2_DBL organisation overview.....	68

1. Introduction

1.1. Purpose and scope

This document is part of the Standard Archive Format for Europe specialisation for GOCE (SAFE Specialisation for GOCE). This specialisation consists of the following set of documents:

- the GOCE mission specialisation control book, which is the top-level document of the specialisation, containing all the information that is common to all SAFE GOCE products and auxiliary files.
- three GOCE product specialisation control books organized by product level, one for GOCE Level-0 products and auxiliary files, one for Level-1 auxiliary files and one for GOCE Level-2 products.

The current book is the specialisation control book for GOCE Level-2 products.

1.2. Book organisation

The specialisation control book GOCE Level-2 products is organized as follows:

Chapter 1: Introduction	Introductory part of the document.
Chapter 2: Target of preservation	Description of the target of preservation for L2 products.
Chapter 3: Data Structures	Specification of the simple and complex types that are common to represent either an HDR or DBL file respectively.
Chapter 4: EGG Specific Data Structures	Specification of the simple and complex types that are used to represent the information of the product types associated to the EGG instrument.
Chapter 5: SST Specific Data Structures	Specification of the simple and complex types that are used to represent the information of the product types associated to the SST instrument.

1.3. Acronyms and Abbreviations

ASCII	American Standard Code for Information Interchange
DBL	Datablock
GNU	GNU is Not Unix
HDR	Header
MPH	Main Product Header
PDS	Payload Data Segment
SPH	Specific Product Header
W3C	World Wide Web Consortium
XML	eXtensible Mark-up Language

2. Target of preservation

GOCE L2 products in native format are available in tar/gzip format, with extension “.TGZ”(GNU-zipped tar file merging). However, the targets of preservation considered in this SAFE specialisation are the header (HDR) and datablock (DBL) parts of those products, i.e. the files which are stored within the tar/gzip files.

The following table summarises the list of product types in scope and points the reader to the sections in the document where the information about the main structure of the file can be found:

Product Type	Target of preservation	Structure specification
EGG_NOM_2_	Header file (.HDR) Datablock file (.DBL)	For HDR see section 4.1.1 For DBL see section 4.2.1
EGG_TRF_2_	Header file (.HDR) Datablock file (.DBL)	For HDR see section 4.1.2 For DBL see section 4.2.2
EGM_GOC_2_	Header file (.HDR) Datablock file (.DBL)	For HDR see section 4.1.3 For DBL see section 4.2.3
SST_PSO_2_	Header file (.HDR) Datablock file (.DBL)	For HDR see section 5.1.1 For DBL see section 5.2.1

Table 1: Product Types Specification Index

As a consequence, any product in native format must be unpackaged and decompressed before being converted into SAFE and the SAFE Packages will only contain the unpackaged and decompressed files. This is because the representation information schemas that are provided along with this specialisation describe the unpackaged and decompressed files, not the tar/gzip format (there would be limitations in doing this, as explained in the SAFE Core Specifications).

3. Data Structures

The information included in this section has been generated using the specifications defined by the schemas that represent the information of the L2 product files.

HDR and DBL files are simple/pure XML files (i.e. text files) that can be represented using standard XML Schemas.

The representation information for HDR and DBL files is described by mean of complex structures that make use of simple types to represent the whole content of a given file type. The following sub-sections provide a detailed description of those complex/simple types that are common to HDR and DBL files respectively.

The diagrams included in this document provide an overview of the structure of the products by depicting the schemas which provide their representation information.

3.1. Data Structures common to HDR files

The following simple and complex types have been specified as basic types to represent the information of the HDR files in the scope. They are available for the representation of any HDR file of a specific product type in scope.

3.1.1. Simple Types

The DFDL schemas used to represent the information of the L2 products make use of the standard W3C simple types (e.g. xs:string, xs:integer, xs:NCName, etc...). Some of these types have been restricted for GOCE needs, resulting in new specific types detailed below:

3.1.1.1. ShortTimeType

Base Type	Format
xs:string	UTC=yyyy-mm-ddThh:mm:ss

Table 2: ShortTimeType Specification

3.1.1.2. LongTimeType

Base Type	Format
xs:string	UTC=yyyy-mm-ddThh:mm:ss.uuuuuu

Table 3: LongTimeType Specification

3.1.1.3. SizeType

Base Type	Format
xs:integer	units: bytes Total Digits : "13"

Table 4: SizeType Specification

3.1.2. Complex Types

The following complex types are used by the DFDL schemas to represent the information of the L2 HDR products and auxiliary files:

3.1.2.1. FixedHeaderType

The standard GOCE header is completely ASCII and based on XML. The Fixed Header is the common header for all files in the GOCE Ground Segment. That means it is applied to all files flowing amongst the sub-systems composing the PDS.

#	Description	Format
1	File_Name Product File Name without the extension	xs:NCName Max Length : 55 bytes
2	File_Description This field shall contain a description of file product. Possible values: L2 gravity gradients in GRF with corrections L2 gravity gradients in LNOF with corrections Final GOCE gravity field model with error estimates and quality report Precise Science Orbit for GOCE Non tidal correction	xs:string
3	Notes This field shall be always empty	xs:string
4	Mission This field shall be always GOCE Possible values: GOCE	xs:NCName
5	File_Class This element allows to specify the usage of the file, for a specific phase of the ground segment development or operations cycle. It allows, in particular, to reset version counters for each new phase without any risk of having ambiguous file names. For example, mission planning files used for SVT tests can be numbered independently for each SVT test, and all of those can be independent from the routine operations numbering. Possible values: OPER	xs:string

#	Description	Format
	TEST CONS	
6	File_Type This element uniquely defines the file structure. All files of the same File Type share the same structure. Possible values: SST_PSO_2_ EGG_NOM_2_ EGG_TRF_2_ EGM_GOC_2_ SST_AUX_2_	xs:NCName
7	Validity_Period This element specifies the Start and Stop time defining the satellite measurement period.	ValidityPeriodType
8	File_Version This field is version number of the generation of the product. It shall start from 0001 and increased by one anytime the same product shall be regenerated.	xs:integer Total Digits : 4
9	Source	SourceType

Table 5: FixedHeaderType Specification

3.1.2.2. *ValidityPeriodType*

#	Description	Format
1	Validity_Start Validity Start time in UTC. This can have the special value 00000000T000000 for beginning of mission, or if a validity period is not applicable.	ShortTimeType
2	Validity_Stop Validity Stop time in UTC. This can have the special value 99999999T999999 for end of mission, or if a validity period is not applicable.	ShortTimeType

Table 6: ValidityPeriodType Specification

3.1.2.3. *SourceType*

#	Description	Format
1	System	xs:string

#	Description	Format
	GOCE High Level Processing Facility (HPF) Possible values: GOCE High Level Processing Facility (HPF)	
2	Creator HPF's Central Processing Facility (CPF) using cpf_eef_create Possible values: HPF's Central Processing Facility (CPF) using cpf_eef_create	xs:string
3	Creator_Version This field gives the version of the creator tool	xs:string
4	Creation_Date This field gives the UTC date of the generation of the file	ShortTimeType

Table 7: SourceType Specification

3.1.2.4. MPHType

#	Description	Format
1	Product Product File Name Note: the file name shall be without the extension.	xs:NCName Max Length : 55 bytes
2	Ref_Doc Reference DFCB Document describing the product shall always be "GO-ID-HPF-GS-0041" (Product Specification for L2 Products and Auxiliary Data Products, Issue 6.1, 30. April 2009) Possible values: GO-MA-HPF-GS-0110	xs:string
3	Acquisition_Station Empty	xs:string
4	Processor	ProcessorType
5	Time_Information	TimeInformationType
6	Phase Phase Code. Not used in GOCE. Set to X Possible values: X	xs:NCName
7	Cycle Cycle number. Not used in GOCE. Set to 0 Possible values: 0	xs:short
8	Rel_Orbit Relative Orbit Number at sensing start time. Not used in GOCE. Set to 0	xs:short

#	Description	Format
	Possible values: 0	
9	Abs_Orbit Absolute Orbit Number at sensing start time. Not used in GOCE. Set to 0 Possible values: 0	xs:integer
10	State_Vector_Time Empty	xs:string
11	X_Position Not used in GOCE. Set to '0.000' Possible values: 0.000	xs:decimal
12	Y_Position Not used in GOCE. Set to '0.000' Possible values: 0.000	xs:decimal
13	Z_Position Not used in GOCE. Set to '0.000' Possible values: 0.000	xs:decimal
14	X_Velocity Not used in GOCE. Set to '0.000000' Possible values: 0.000000	xs:decimal
15	Y_Velocity Not used in GOCE. Set to '0.000000' Possible values: 0.000000	xs:decimal
16	Z_Velocity Not used in GOCE. Set to '0.000000' Possible values: 0.000000	xs:decimal
17	Vector_Source Empty	xs:string
18	Product_Err Product Errors: 0 - no errors; 1 - errors have been reported Possible values: 0 1	xs:integer
19	DBL_Size Datablock Size (unit: bytes)	xs:integer Total Digits : 13
20	HDR_Size Header Size (unit: bytes)	xs:integer Total Digits : 11

#	Description	Format
21	Num_DSD Number of DSD	xs:integer
22	Num_Data_Sets Number of DSDs with Dta_Set_Type='O'	xs:integer
23	CRC Not used in GOCE. Possible values: -1	xs:integer

Table 8: MPHType Specification

3.1.2.5. ProcessorType

#	Description	Format
1	Proc_Stage Processing stage code. Possible values: O T R C	xs:string
2	Proc_Center "HPF" for L2 Possible values: HPF	xs:string
3	Proc_Time Processing Time (Product Generation Time)	ShortTimeType
4	Software_Ver Processor Name and software version number. ProcessorName/VV.rr	xs:string

Table 9: ProcessorType Specification

3.1.2.6. TimeInformationType

#	Description	Format
1	Sensing	SensingType
2	Abs_Orbit Absolute Orbit Number at sensing stop and start time.	AbsOrbitType

Table 10: TimeInformationType Specification

3.1.2.7. SensingType

#	Description	Format
1	Start	LongTimeType

#	Description	Format
	UTC=yyyy-mm-ddThh:mm:ss.uuuuuu Can contain a 'not applicable' (N/A) value: UTC=0000-00-00T00:00:00.000000	
2	Stop UTC=yyyy-mm-ddThh:mm:ss.uuuuuu Can contain a 'not applicable' (N/A) value: UTC=9999-99-99T99:99:99.999999	LongTimeType

Table 11: SensingType Specification

3.1.2.8. *AbsOrbitType*

#	Description	Format
1	Start	xs:integer
2	Stop	xs:integer

Table 12: AbsOrbitType Specification

3.2. Data Structures common to DBL files

There are no complex nor simple types common to all DBL files. Instead, some specific types have been defined per product type and they are described in following sections.

4. EGG Specific Data Structures

This section contains the data structures of the XML schemas used to represent the information of the GOCE L2 products associated to the EGG instrument.

4.1. Data Structures for file types in HDR format

The data structures have been classified by product type in the following sub-sections:

4.1.1. *EGG_NOM_2_HDR*

Next figure provides an overview of how the high level complex structures and basic types are organised to describe the information of an EGG_NOM_2 product type in HDR format:

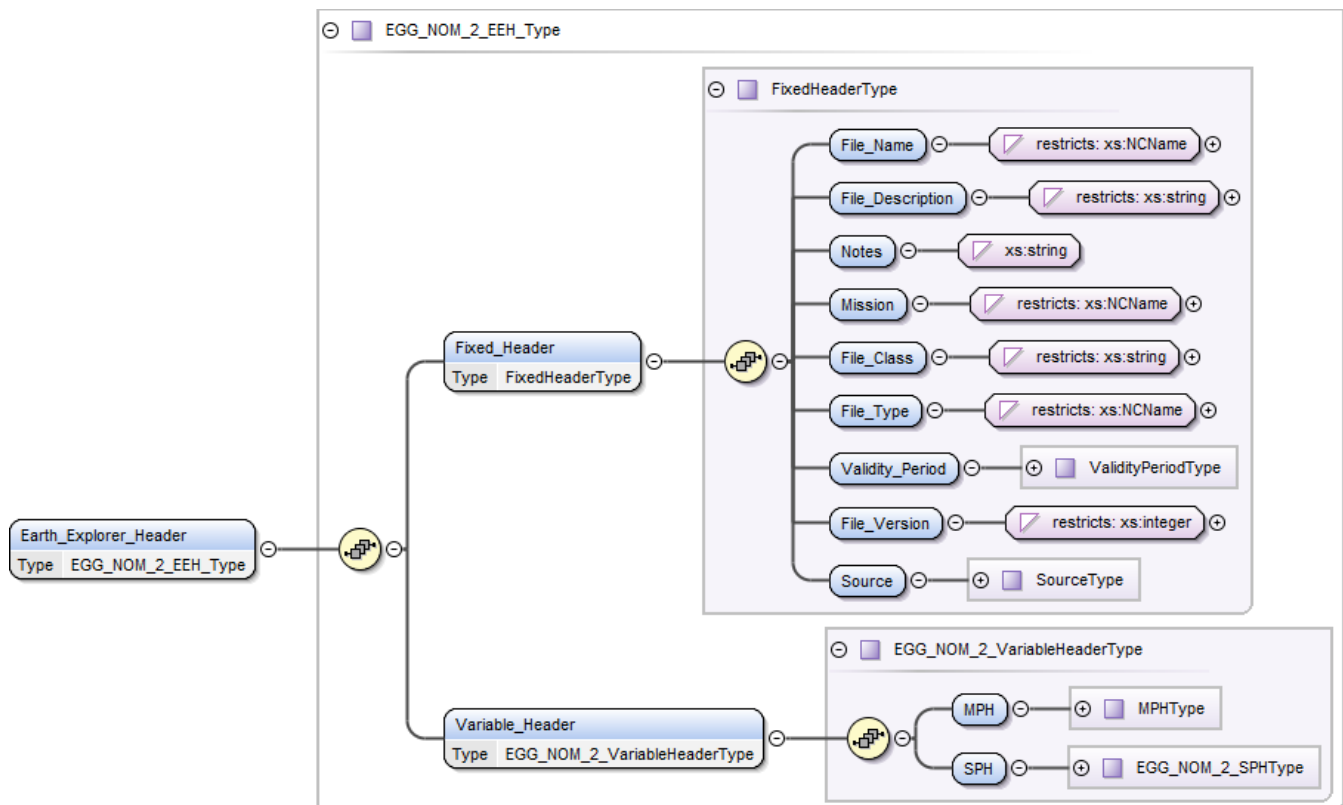


Figure 1: *EGG_NOM_2_HDR* organisation overview

A detailed description of each complex type used for the representation information of this product type is given below:

4.1.1.1. *Root Element*

#	Name/Description	Format
1	Earth_Explorer_Header The XML Header file contains information identifying the product and is easy to read as	EGG_NOM_2_EEH_Type

#	Name/Description	Format
	<p>based on a standard syntax accessed by common tools available for visualizing its content. The XML header file consists of:</p> <ul style="list-style-type: none"> * A fixed header * A variable header <p>The Fixed Header (hereafter called Standard GOCE Header) is the common header for all files produced by the HPF. The Variable Header (hereafter called Product Header) is the header with the format and content depending on the file type and kind of product.</p>	

Table 13: Earth_Explorer_Header Specification

4.1.1.2. Complex Types

4.1.1.2.1. EGG_NOM_2_EEH_Type

#	Description	Format
1	Fixed_Header	FixedHeaderType
2	Variable_Header	EGG_NOM_2_VariableHeaderType

Table 14: EGG_NOM_2_EEH_Type Specification

4.1.1.2.2. EGG_NOM_2_VariableHeaderType

#	Description	Format
1	MPH	MPHType
2	SPH	EGG_NOM_2_SPHType

Table 15: EGG_NOM_2_VariableHeaderType Specification

4.1.1.2.3. EGG_NOM_2_SPHType

#	Description	Format
1	SPH_Descriptor Name describing the Specific Product Header. Equal to File_Type (see fixed header) Possible values: EGG_NOM_2	xs:string
2	Original_Source	Original_SourceType_EGG_NOM_2_SPHType
3	Time_Information	Time_InformationType_EGG_NOM_2
4	EGG_NOM_2	SpecificType_EGG_NOM_2
5	DSDs	DSDsType

Table 16: EGG_NOM_2_SPHType Specification

4.1.1.2.4. Original_SourceType_EGG_NOM_2_SPHType

#	Description	Format
1	Product Prod. name of orig. src. in HPF format	xs:NCName

Table 17: Original_SourceType_EGG_NOM_2_SPHType Specification

4.1.1.2.5. DSDsType

#	Description	Format
1	List_of_DSDs Number of Data Sets	List_of_DSDsType

Table 18: DSDsType Specification

4.1.1.2.6. List_of_DSDsType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Description	Format
1	Data_Set_Descriptor	Data_Set_DescriptorType
		Max Occurs : unbounded

Table 19: List_of_DSDsType Specification

4.1.1.2.7. Time_InformationType_EGG_NOM_2

#	Description	Format
1	GPS_Time	GPS_TimeType
2	Abs_Orbit	Abs_Orbit

Table 20: Time_InformationType_EGG_NOM_2 Specification

4.1.1.2.8. GPS_TimeType

#	Description	Format
1	Start	xs:decimal Total Digits : 20 Fraction Digits: 9
2	Stop	xs:decimal Total Digits : 20 Fraction Digits: 9

Table 21: GPS_TimeType Specification

4.1.1.2.9. Abs_Orbit

#	Description	Format
1	Start	xs:integer
2	Stop	xs:integer

Table 22: Abs_Orbit Specification

4.1.1.2.10. Data_Set_DescriptorType

#	Description	Format
1	Data_Set_Name Name describing the Data Set	xs:string
2	Data_Set_Type Type of Data Set. Possible values: I O S	xs:NCName
3	File_Name Name of Reference File	xs:string Max Length : 62 bytes
4	Num_Epochs	xs:string
5	MD5	xs:string

Table 23: Data_Set_DescriptorType Specification

4.1.1.2.11. SpecificType_EGG_NOM_2

#	Description	Format
1	Original_Source	Original_SourceType_EGG_NOM_2
2	Product_Type Product Type Possible values: quick_look final	xs:string
3	Input	InputType
4	Reference_System Reference System shall always be “GRF” Possible values: GRF	xs:string
5	Tide_System Tide System Possible values: zero_tide tide_free unknown	xs:string

#	Description	Format
6	Gravity_Model Reference gravity model used	xs:string
7	Errors Errors Possible values: formal calibrated	xs:string

Table 24: SpecificType_EGG_NOM_2 Specification

4.1.1.2.12. Original_SourceType_EGG_NOM_2

#	Description	Format
1	Format	FormatType

Table 25: Original_SourceType_EGG_NOM_2 Specification

4.1.1.2.13. FormatType

#	Description	Format
1	Name Format Name Possible values: GG_time	xs:string
2	Version	xs:string

Table 26: FormatType Specification

4.1.1.2.14. InputType

#	Description	Format
1	L1 L1 Inputs Possible values: fast consolidated recomputed	xs:string
2	L2 L2 inputs Possible values: quick_look precise	xs:string

Table 27: InputType Specification

4.1.2. EGG_TRF_2_HDR

Next figure provides an overview of how the high level complex structures and basic types are

organised to describe the information of an EGG_TRF_2 product type in HDR format:

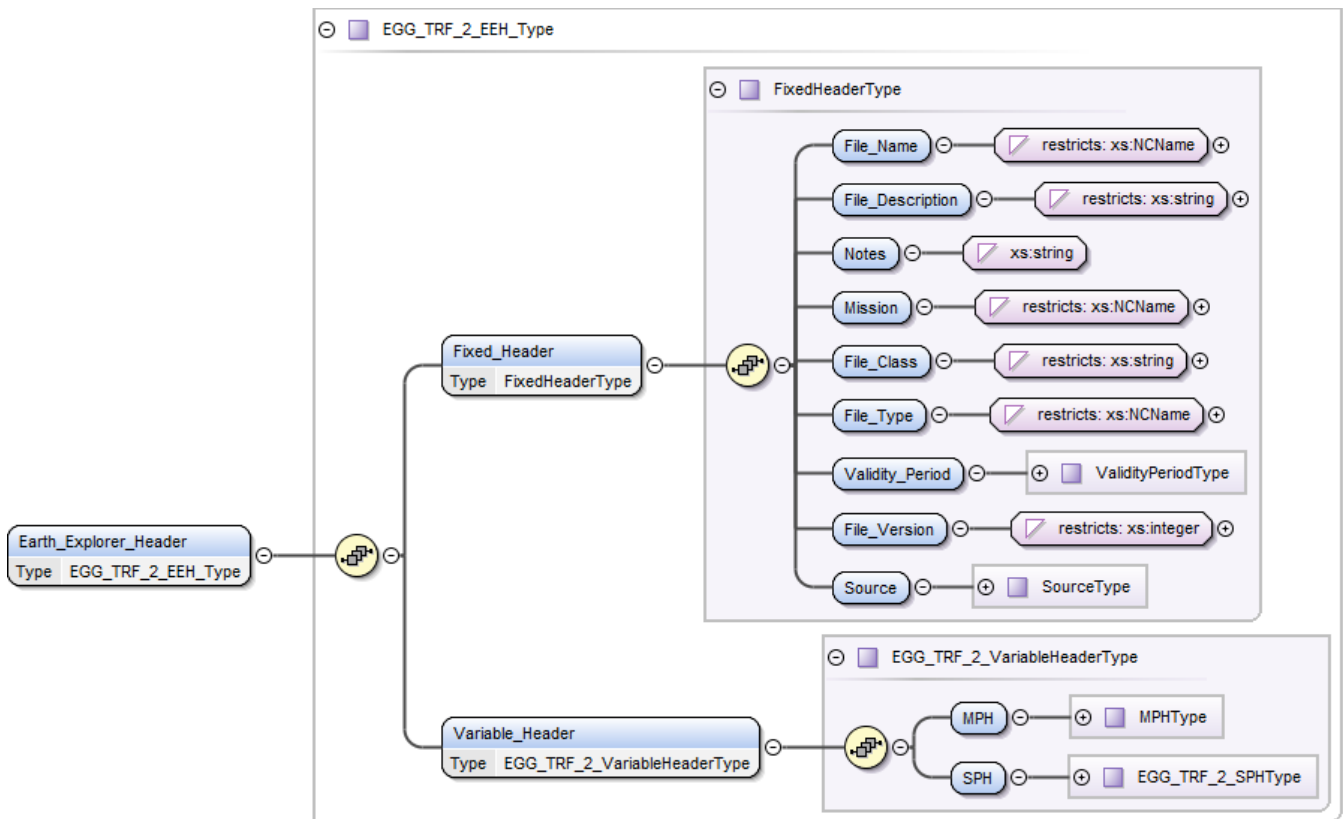


Figure 2: EGG_TRF_2_HDR organisation overview

A detailed description of each complex type used for the representation information of this product type is given below:

4.1.2.1. Root Element

#	Name/Description	Format
1	<p>Earth_Explorer_Header</p> <p>The XML Header file contains information identifying the product and is easy to read as based on a standard syntax accessed by common tools available for visualizing its content. The XML header file consists of:</p> <ul style="list-style-type: none"> * A fixed header * A variable header <p>The Fixed Header (hereafter called Standard GOCE Header) is the common header for all files produced by the HPF.</p> <p>The Variable Header (hereafter called Product</p>	EGG_TRF_2_EEH_Type

#	Name/Description	Format
	Header) is the header with the format and content depending on the file type and kind of product.	

Table 28: Earth_Explorer_Header Specification

4.1.2.2. Complex Types

4.1.2.2.1. EGG_TRF_2_EEH_Type

Earth Explorer Header Header Type for EGG_TRF_2

#	Description	Format
1	Fixed_Header	FixedHeaderType
2	Variable_Header	EGG_TRF_2_VariableHeaderType

Table 29: EGG_TRF_2_EEH_Type Specification

4.1.2.2.2. EGG_TRF_2_VariableHeaderType

#	Description	Format
1	MPH	MPHType
2	SPH	EGG_TRF_2_SPHType

Table 30: EGG_TRF_2_VariableHeaderType Specification

4.1.2.2.3. EGG_TRF_2_SPHType

#	Description	Format
1	SPH_Descriptor Name describing the Specific Product Header. Equal to File_Type (see fixed header) Possible values: EGG_TRF_2	xs:string
2	Original_Source	Original_SourceType_EGG_TRF_2
3	Time_Information	Time_InformationType
4	EGG_TRF_2	SpecificType_EGG_TRF_2
5	DSDs	DSDsType

Table 31: EGG_TRF_2_SPHType Specification

4.1.2.2.4. Original_SourceType_EGG_TRF_2

#	Description	Format
1	Product Prod. name of orig. src. in HPF format	xs:NCName

Table 32: Original_SourceType_EGG_TRF_2 Specification

4.1.2.2.5. Time_InformationType

#	Description	Format
1	GPS_Time	GPS_TimeType
2	Abs_Orbit	Abs_OrbitType

Table 33: Time_InformationType Specification

4.1.2.2.6. DSDsType

#	Description	Format
1	List_of_DSDs Number of Data Sets	List_of_DSDsType

Table 34: DSDsType Specification

4.1.2.2.7. GPS_TimeType

#	Description	Format
1	Start	xs:decimal Total Digits : 20 Fraction Digits: 9
2	Stop	xs:decimal Total Digits : 20 Fraction Digits: 9

Table 35: GPS_TimeType Specification

4.1.2.2.8. Abs_OrbitType

#	Description	Format
1	Start	xs:integer
2	Stop	xs:integer

Table 36: Abs_OrbitType Specification

4.1.2.2.9. List_of_DSDsType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Description	Format
1	Data_Set_Descriptor	Data_Set_DescriptorType Max Occurs : unbounded

Table 37: List_of_DSDsType Specification

4.1.2.2.10. Data_Set_DescriptorType

#	Description	Format
1	Data_Set_Name Name describing the Data Set	xs:string
2	Data_Set_Type Type of Data Set. Possible values: I O S	xs:NCName
3	File_Name Name of Reference File	xs:string Max Length : 62 bytes
4	Num_Epochs	xs:string
5	MD5	xs:string

Table 38: Data_Set_DescriptorType Specification

4.1.2.2.11. SpecificType_EGG_TRF_2

#	Description	Format
1	Original_Source	Original_Source_EGG_TRF_2
2	Product_Type Product Type shall always be "final" Possible values: final	xs:string
3	Input	InputType
4	Reference_System Reference System shall always be "TRF" Possible values: TRF	xs:string
5	Tide_System Tide System Possible values: zero_tide tide_free unknown	xs:string
6	Gravity_Model Reference gravity model used.	xs:string
7	Errors Errors Possible values: formal calibrated	xs:string

Table 39: SpecificType_EGG_TRF_2 Specification

4.1.2.2.12. Original_Source_EGG_TRF_2

#	Description	Format
1	Format	FormatType

Table 40: Original_Source_EGG_TRF_2 Specification

4.1.2.2.13. FormatType

#	Description	Format
1	Name Format Name Possible values: GG_spatial	xs:string
2	Version	xs:string

Table 41: FormatType Specification

4.1.2.2.14. InputType

#	Description	Format
1	L1 Input L1 Possible values: consolidated recomputed	xs:string
2	L2 Input L2 Possible values: precise	xs:string

Table 42: InputType Specification

4.1.3. EGM_GOC_2_HDR

Next figure provides an overview of how the high level complex structures and basic types are organised to describe the information of an EGM_GOC_2 product type in HDR format:

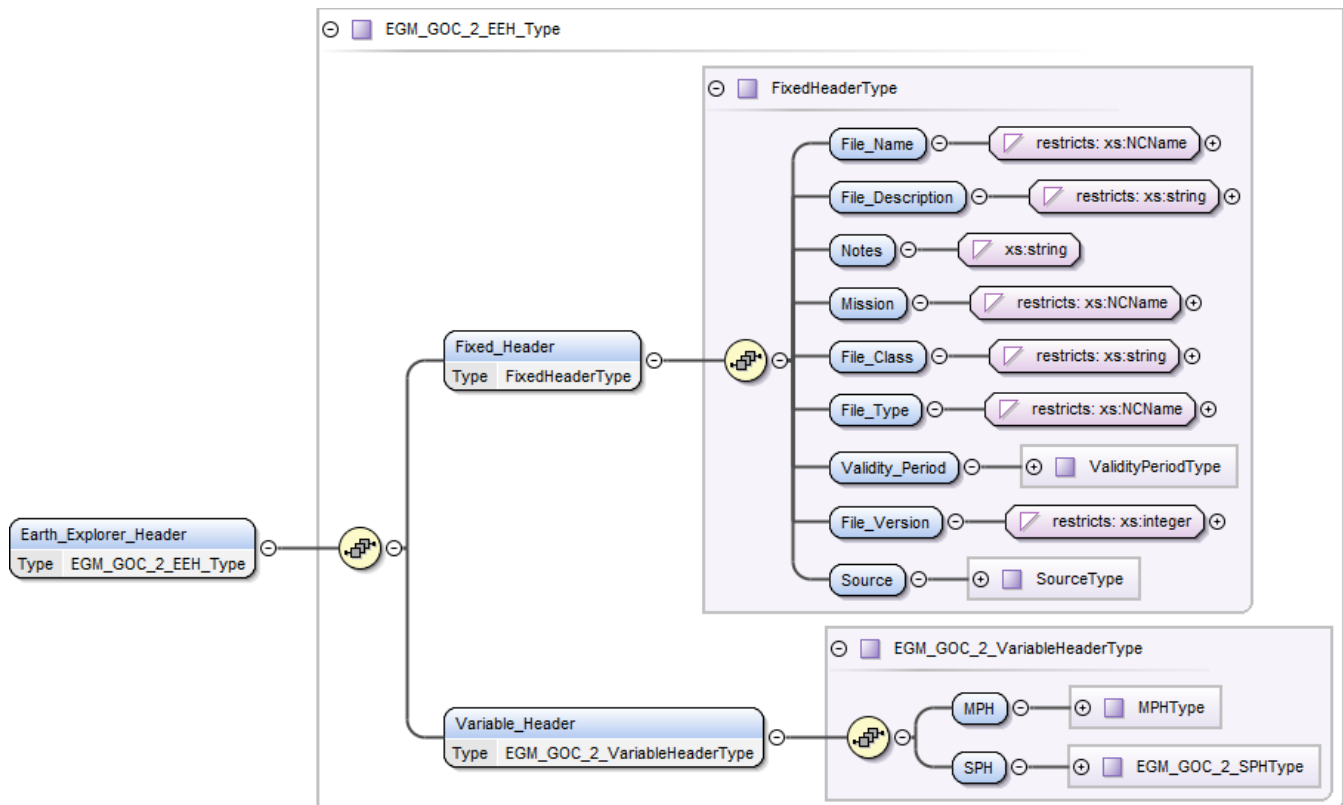


Figure 3: EGM_GOC_2_HDR organisation overview

A detailed description of each complex type used for the representation information of this product type is given below:

4.1.3.1. Root Element

#	Name/Description	Format
1	<p>Earth_Explorer_Header</p> <p>The XML Header file contains information identifying the product and is easy to read as based on a standard syntax accessed by common tools available for visualizing its content. The XML header file consists of:</p> <ul style="list-style-type: none"> * A fixed header * A variable header <p>The Fixed Header (hereafter called Standard GOCE Header) is the common header for all files produced by the HPF.</p> <p>The Variable Header (hereafter called Product Header) is the header with the format and content depending on the file type and kind of product.</p>	EGM_GOC_2_EEH_Type

Table 43: Earth_Explorer_Header Specification

4.1.3.2. Complex Types

4.1.3.2.1. EGM_GOC_2_EEH_Type

Earth Explorer Header Header Type for EGM_GOC_2

#	Description	Format
1	Fixed Header	FixedHeaderType
2	Variable Header	EGM_GOC_2_VariableHeaderType

Table 44: EGM_GOC_2_EEH_Type Specification

4.1.3.2.2. EGM_GOC_2_VariableHeaderType

#	Description	Format
1	MPH	MPHType
2	SPH	EGM_GOC_2_SPHType

Table 45: EGM_GOC_2_VariableHeaderType Specification

4.1.3.2.3. EGM_GOC_2_SPHType

#	Description	Format
1	SPH_Descriptor Name describing the Specific Product Header. Equal to File_Type (see fixed header) Possible values: EGM_GOC_2	xs:string
2	Original Source	Original_SourceType EGM_GOC_2
3	Time Information	Time_InformationType
4	EGM_GOC_2	EGM_GOC_2_SpecificType
5	DSDs	DSDsType

Table 46: EGM_GOC_2_SPHType Specification

4.1.3.2.4. Original_SourceType_EGM_GOC_2

#	Description	Format
1	Product Prod. name of orig. src. in HPF format	xs:NCName

Table 47: Original_SourceType_EGM_GOC_2 Specification

4.1.3.2.5. Time_InformationType

#	Description	Format
1	GPS_Time	GPS_TimeType
2	Abs_Orbit	Abs_OrbitType

Table 48: Time_InformationType Specification

4.1.3.2.6. GPS_TimeType

#	Description	Format
1	Start	xs:decimal Total Digits : 20 Fraction Digits: 9
2	Stop	xs:decimal Total Digits : 20 Fraction Digits: 9

Table 49: GPS_TimeType Specification

4.1.3.2.7. Abs_OrbitType

#	Description	Format
1	Start	xs:integer
2	Stop	xs:integer

Table 50: Abs_OrbitType Specification

4.1.3.2.8. DSDsType

#	Description	Format
1	List_of_DSDs Number of Data Sets	List_of_DSDsType

Table 51: DSDsType Specification

4.1.3.2.9. List_of_DSDsType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Description	Format
1	Data_Set_Descriptor	Data_Set_DescriptorType Max Occurs : unbounded

Table 52: List_of_DSDsType Specification

4.1.3.2.10. Data_Set_DescriptorType

#	Description	Format
1	Data_Set_Name Name describing the Data Set	xs:string

#	Description	Format
2	Data_Set_Type Type of Data Set. Possible values: I O S	xs:NCName
3	File_Name Name of Reference File	xs:string Max Length : 62 bytes
4	Num_Epochs	xs:string
5	MD5	xs:string

Table 53: Data_Set_DescriptorType Specification

4.1.3.2.11. EGM_GOC_2_SpecificType

#	Description	Format
1	EGM_GAN_2	EGM_GAN_2Type
2	EGM_GRP_2	EGM_GRP_2Type
3	EGM_GEO_2	EGM_GEO_2Type
4	EGM_GVN_2	EGM_GVN_2Type
5	EGM_GVE_2	EGM_GVE_2Type
6	EGM_GER_2	EGM_GER_2Type
7	EGM_GCF_2	EGM_GCF_2Type

Table 54: EGM_GOC_2_SpecificType Specification

4.1.3.2.12. EGM_GAN_2Type

#	Description	Format
1	Original_Source	Original_SourceType EGM_GAN_2
2	Data_Information	Data_InformationType
3	Coordinate_Information	Coordinate_InformationType
4	Flags	FlagsType EGM_GAN_2
5	Reference_Ellipsoid	xs:string
6	Gap_Value	xs:float

Table 55: EGM_GAN_2Type Specification

4.1.3.2.13. Original_SourceType_EGM_GAN_2

#	Description	Format
1	Format	FormatType EGM_GAN_2

Table 56: Original_SourceType_EGM_GAN_2 Specification

4.1.3.2.14. FormatType_EGM_GAN_2

#	Description	Format
1	Name Format Name Possible values: Grid	xs:string
2	Version	xs:string
3	Fortran_Notation	xs:string

Table 57: FormatType_EGM_GAN_2 Specification

4.1.3.2.15. FlagsType_EGM_GAN_2

#	Description	Format
1	Mean_or_Point_Values Mean_or Point Values Possible values: mean point	xs:string
2	Geocentric_or_Geodetic_Latitudes Geocentric or Geodetic Latitudes Possible values: geocentric geodetic	xs:string

Table 58: FlagsType_EGM_GAN_2 Specification

4.1.3.2.16. EGM_GRP_2Type

#	Description	Format
1	Original_Source	Original SourceType EGM_GRP_2

Table 59: EGM_GRP_2Type Specification

4.1.3.2.17. Original_SourceType_EGM_GRP_2

#	Description	Format
1	Format	FormatType EGM_GRP_2

Table 60: Original_SourceType_EGM_GRP_2 Specification

4.1.3.2.18. FormatType_EGM_GRP_2

#	Description	Format
1	Name Format Name Possible values: PDF	xs:string
2	Version	xs:string

Table 61: FormatType_EGM_GRP_2 Specification

4.1.3.2.19. EGM_GEO_2Type

#	Description	Format
1	Original_Source	Original_SourceType_EGM_GEO_2
2	Data_Information	Data_InformationType
3	Coordinate_Information	Coordinate_InformationType
4	Flags	FlagsType_EGM_GEO_2
5	Reference_Ellipsoid	xs:string
6	Gap_Value	xs:float

Table 62: EGM_GEO_2Type Specification

4.1.3.2.20. Original_SourceType_EGM_GEO_2

#	Description	Format
1	Format	FormatType_EGM_GEO_2

Table 63: Original_SourceType_EGM_GEO_2 Specification

4.1.3.2.21. FormatType_EGM_GEO_2

#	Description	Format
1	Name Format Name Possible values: Grid	xs:string
2	Version	xs:string
3	Fortran_Notation	xs:string

Table 64: FormatType_EGM_GEO_2 Specification

4.1.3.2.22. FlagsType_EGM_GEO_2

#	Description	Format
1	Mean_or_Point_Values Mean or Point Values Possible values: mean point	xs:string
2	Geocentric_or_Geodetic_Latitudes Geocentric or Geodetic Latitudes Possible values: geocentric geodetic	xs:string

Table 65: FlagsType_EGM_GEO_2 Specification

4.1.3.2.23. EGM_GVN_2Type

#	Description	Format
1	Original Source	Original SourceType EGM GVN 2
2	Data Information	Data InformationType
3	Coordinate Information	Coordinate InformationType
4	Flags	FlagsType EGM GVN 2
5	Reference Ellipsoid	xs:string
6	Gap Value	xs:float

Table 66: EGM_GVN_2Type Specification

4.1.3.2.24. Original_SourceType_EGM_GVN_2

#	Description	Format
1	Format	FormatType EGM GVN 2

Table 67: Original_SourceType_EGM_GVN_2 Specification

4.1.3.2.25. FormatType_EGM_GVN_2

#	Description	Format
1	Name Format Name Possible values: Grid	xs:string
2	Version	xs:string
3	Fortran Notation	xs:string

Table 68: FormatType_EGM_GVN_2 Specification

4.1.3.2.26. FlagsType_EGM_GVN_2

#	Description	Format
1	Mean_or_Point Values Mean or Point Values Possible values: mean point	xs:string
2	Geocentric_or_Geodetic Latitudes Geocentric or Geodetic Latitudes Possible values: geocentric geodetic	xs:string

Table 69: FlagsType_EGM_GVN_2 Specification

4.1.3.2.27. EGM_GVE_2Type

#	Description	Format
1	Original Source	Original SourceType EGM GVE 2
2	Data Information	Data InformationType
3	Coordinate Information	Coordinate InformationType
4	Flags	FlagsType EGM GVE 2
5	Reference Ellipsoid	xs:string
6	Gap Value	xs:float

Table 70: EGM_GVE_2Type Specification

4.1.3.2.28. Original_SourceType_EGM_GVE_2

#	Description	Format
1	Format	FormatType EGM GVE 2

Table 71: Original_SourceType_EGM_GVE_2 Specification

4.1.3.2.29. FormatType_EGM_GVE_2

#	Description	Format
1	Name Format Name Possible values: Grid	xs:string
2	Version	xs:string
3	Fortran Notation	xs:string

Table 72: FormatType_EGM_GVE_2 Specification

4.1.3.2.30. FlagsType_EGM_GVE_2

#	Description	Format
1	Mean_or_Point_Values Mean or Point_Values Possible values: mean point	xs:string
2	Geocentric_or_Geodetic_Latitudes Geocentric or Geodetic Latitudes Possible values: geocentric geodetic	xs:string

Table 73: FlagsType_EGM_GVE_2 Specification

4.1.3.2.31. EGM_GER_2Type

#	Description	Format
1	Original Source	Original SourceType EGM GER 2
2	Data Information	Data InformationType
3	Coordinate Information	Coordinate InformationType
4	Flags	FlagsType EGM GER 2
5	Reference Ellipsoid	xs:string
6	Gap Value	xs:float

Table 74: EGM_GER_2Type Specification

4.1.3.2.32. Original_SourceType_EGM_GER_2

#	Description	Format
1	Format	FormatType EGM GER 2

Table 75: Original_SourceType_EGM_GER_2 Specification

4.1.3.2.33. FormatType_EGM_GER_2

#	Description	Format
1	Name Format Name Possible values: Grid	xs:string
2	Version	xs:string
3	Fortran Notation	xs:string

Table 76: FormatType_EGM_GER_2 Specification

4.1.3.2.34. FlagsType_EGM_GER_2

#	Description	Format
1	Mean_or_Point Values Mean or Point Values Possible values: mean point	xs:string
2	Geocentric_or_Geodetic Latitudes Geocentric or Geodetic Latitudes Possible values: geocentric geodetic	xs:string

Table 77: FlagsType_EGM_GER_2 Specification

4.1.3.2.35. EGM_GCF_2Type

#	Description	Format
1	Original Source	Original SourceType EGM GCF 2
2	Product Type	xs:string
3	Model Name	xs:string
4	Earth Gravity Constant	xs:float
5	Spherical Harmonic Development	Spherical Harmonic DevelopmentType
6	Errors	xs:string
7	Normalization	xs:string
8	Tide_System	xs:string Min Occurs : 0
9	Comments	xs:string Min Occurs : 0

Table 78: EGM_GCF_2Type Specification

4.1.3.2.36. Original_SourceType_EGM_GCF_2

#	Description	Format
1	Format	FormatType EGM GCF 2

Table 79: Original_SourceType_EGM_GCF_2 Specification

4.1.3.2.37. Spherical_Harmonic_DevelopmentType

#	Description	Format
1	Radius	xs:string
2	Max_Degree	xs:string

Table 80: Spherical_Harmonic_DevelopmentType Specification

4.1.3.2.38. FormatType_EGM_GCF_2

#	Description	Format
1	Name Format Name Possible values: ICGEM	xs:string
2	Version	xs:string

Table 81: FormatType_EGM_GCF_2 Specification

4.1.3.2.39. Coordinate_InformationType

#	Description	Format
1	Latitude	Coordinate_InformationType_LatitudeType

#	Description	Format
		Max Occurs : unbounded
2	Longitude	Coordinate_InformationType_LongitudeType Max Occurs : unbounded

Table 82: Coordinate_InformationType Specification

4.1.3.2.40. Coordinate_InformationType_LatitudeType

#	Description	Format
1	Northern_Border	Northern_BorderType
2	Southern_Border	Southern_BorderType
3	Cell_Information	Cell_InformationType

Table 83: Coordinate_InformationType_LatitudeType Specification

4.1.3.2.41. Coordinate_InformationType_LongitudeType

#	Description	Format
1	Western_Border	Western_BorderType
2	Eastern_Border	Eastern_BorderType
3	Cell_Information	Cell_InformationType

Table 84: Coordinate_InformationType_LongitudeType Specification

4.1.3.2.42. Northern_BorderType

#	Description	Format
1	Northern Border Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 85: Northern_BorderType Specification

4.1.3.2.43. Southern_BorderType

#	Description	Format
1	Southern Border Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 86: Southern_BorderType Specification

4.1.3.2.44. Western_BorderType

#	Description	Format
1	Western Border Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 87: Western_BorderType Specification

4.1.3.2.45. Eastern_BorderType

#	Description	Format
1	Eastern Border Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 88: Eastern_BorderType Specification

4.1.3.2.46. Cell_InformationType

#	Description	Format
1	Number of Cells	xs:integer
2	Size	Cell_InformationType_SizeType

Table 89: Cell_InformationType Specification

4.1.3.2.47. Cell_InformationType_SizeType

#	Description	Format
1	Size Type for the Cell Information Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "optional"

Table 90: Cell_InformationType_SizeType Specification

4.1.3.2.48. Data_InformationType

#	Description	Format
1	Dataset Name	xs:string
2	Description	xs:string

#	Description	Format
3	Unit	xs:string

Table 91: Data_InformationType Specification

4.2. Data Structures for file types in DBL format

4.2.1. EGG_NOM_2_DBL

Next provides an overview of how the high level complex structures and basic types are organised to describe the information of an EGG_NOM_2 product type in DBL format:

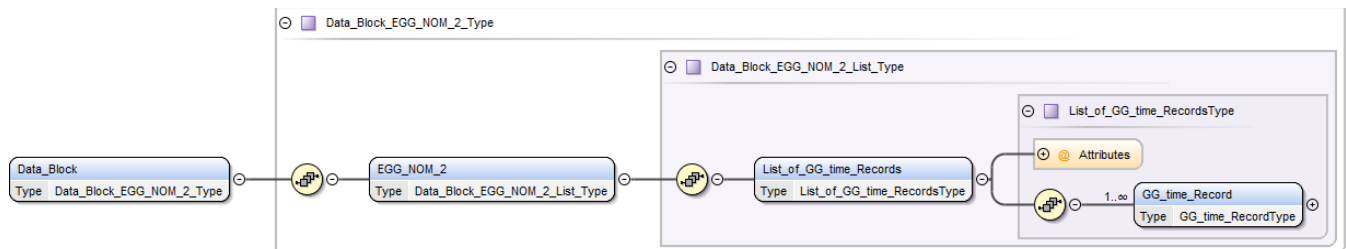


Figure 4: EGG_NOM_2_DBL organisation overview

A detailed description of each complex type used for the representation information of this product type is given below:

4.2.1.1. Root Element

#	Name/Description	Format
1	<p>Data_Block Gravity Gradients in the Gradiometer Reference Frame (GRF)corrected for temporal gravity field variations and validated against external gravity data. Outliers and data gaps are identified and external calibration is performed.</p> <p>Representation: Time series</p> <p>Reference Frame: GRF (HPF GOCE standards apply)</p> <p>Time System: GPS time (HPF GOCE standards apply)</p> <p>Spatial Coverage: Not applicable</p> <p>Temporal Coverage: 1 day</p> <p>Spatial Resolution: 8 km along-track</p>	Data_Block_EGG_NOM_2_Type

#	Name/Description	Format
	Temporal Resolution: 1 s Units: S.I. (1/s ² for the gravity gradients and the corrections) Latency: 2 weeks	

Table 92: Data_Block Specification

4.2.1.2. Simple Types

4.2.1.2.1. FlagsCoordFormatType

Base Type	Length (bytes)	Comments
xs:integer		Min. Value: 0 Max. Value: 6

Table 93: FlagsCoordFormatType Specification

4.2.1.3. Complex Types

4.2.1.3.1. Data_Block_EGG_NOM_2_Type

#	Name/Description	Format
1	EGG_NOM_2	Data_Block_EGG_NOM_2_List_Type

Table 94: Data_Block_EGG_NOM_2_Type Specification

4.2.1.3.2. Data_Block_EGG_NOM_2_List_Type

#	Name/Description	Format
1	List_of_GG_time_Records	List_of_GG_time_RecordsType

Table 95: Data_Block_EGG_NOM_2_List_Type Specification

4.2.1.3.3. List_of_GG_time_RecordsType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Name/Description	Format
1	GG_time_Record	GG_time_RecordType Max Occurs : unbounded

Table 96: List_of_GG_time_RecordsType Specification

4.2.1.3.4. GG_time_RecordType

#	Name/Description	Format
1	Time_Information	Time_InformationType_EGG_NOM_2
2	Gravity_Gradients Corrections to gravity gradients due to temporal gravity field variations.	XX_YZ_doubleType

#	Name/Description	Format
3	Sigmas Gravity gradient error estimates	XX_YZ_doubleType
4	Flags Flags for outliers, fill-in gravity gradients for data gaps with flags.	FlagsType
5	Corrections Gravity gradient external calibration corrections.	CorrectionsType
6	Quaternions Inertial attitude quaternions from L1B product EGG_NOM_1B (EGG_IAQ).	QuaternionsType

Table 97: GG_time_RecordType Specification

4.2.1.3.5. Time_InformationType_EGG_NOM_2

#	Name/Description	Format
1	GPS_Time	xs:double

Table 98: Time_InformationType_EGG_NOM_2 Specification

4.2.1.3.6. CorrectionsType

Attribute:

Name	Use	Type
unit	required	xs:string

#	Name/Description	Format
1	Temporal	TemporalType
2	Calibration	XX_YZ_doubleType

Table 99: CorrectionsType Specification

4.2.1.3.7. TemporalType

#	Name/Description	Format
1	Tidal	TidalType
2	Non-Tidal	XX_YZ_doubleType

Table 100: TemporalType Specification

4.2.1.3.8. QuaternionsType

#	Name/Description	Format
1	Q1	xs:double
2	Q2	xs:double
3	Q3	xs:double
4	Q4	xs:double

Table 101: QuaternionsType Specification

4.2.1.3.9. TidalType

#	Name/Description	Format
1	Direct Tides	XX_YZ_doubleType
2	Solid Earth	XX_YZ_doubleType

#	Name/Description	Format
3	Ocean Tides	XX_YZ_doubleType
4	Pole Tides	XX_YZ_doubleType

Table 102: TidalType Specification

4.2.1.3.10. XX_YZ_doubleType

Attribute:

Name	Use	Type
unit	optional	xs:string

#	Name/Description	Format
1	XX	xs:double
2	YY	xs:double
3	ZZ	xs:double
4	XY	xs:double
5	XZ	xs:double
6	YZ	xs:double

Table 103: XX_YZ_doubleType Specification

4.2.1.3.11. FlagsType

The flags in the data records have the following meaning:

0. Original Level 1b GGs
1. GGs with temporal corrections applied and validated with external gravity data
2. GG with temporal corrections applied and external validation performed and calibration parameters applied.
3. GG with temporal corrections, external validation performed, outlier suspected and fill-in value provided.
4. GG with temporal corrections applied, external calibration performed, outlier suspected, fill-in value not provided.
5. GG with temporal corrections applied, external ncalibration performed, data gap suspected, fill-in value provided.
6. GG with temporal corrections applied, external calibration performed, data gap suspected but no fill-in value provided.

#	Name/Description	Format
1	XX	FlagsCoordFormatType
2	YY	FlagsCoordFormatType
3	ZZ	FlagsCoordFormatType
4	XY	FlagsCoordFormatType
5	XZ	FlagsCoordFormatType
6	YZ	FlagsCoordFormatType

Table 104: FlagsType Specification

4.2.2. EGG_TRF_2_DBL

Next provides an overview of how the high level complex structures and basic types are organised to describe the information of an EGG_TRF_2 product type in DBL format:

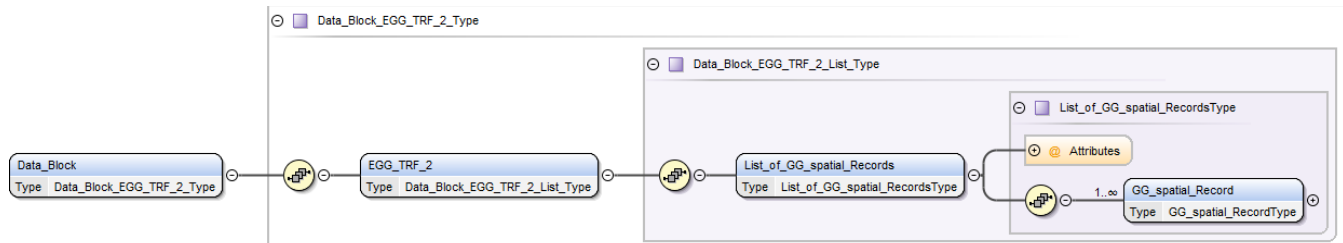


Figure 5: EGG_TRF_2_DBL organisation overview

A detailed description of each complex type used for the representation information of this product type is given below:

4.2.2.1. Root Element

#	Name/Description	Format
1	<p>Data_Block Gravity Gradients in Local North-Oriented reference Frame (LNOF) corrected for temporal gravity field variations. Outliers and data gaps are identified and external calibration is applied.</p> <p>Representation: Time series</p> <p>Reference Frame: LNOF: Local north-oriented reference frame (HPF GOCE standards apply)</p> <p>Time System: GPS time (HPF GOCE standards apply)</p> <p>Spatial Coverage: Global coverage without polar caps (depends on inclination of GOCE orbit)</p> <p>Temporal Coverage: 1 month</p> <p>Spatial Resolution: 8 km along-track</p> <p>Temporal Resolution: 1 s</p> <p>Units: S.I. (1/s² for the gravity gradients)</p> <p>Latency: 1 month</p>	Data_Block_EGG_TRF_2_Type

Table 105: Data_Block Specification

4.2.2.2. Simple Types

4.2.2.2.1. FlagsCoordFormatType

Base Type	Length (bytes)	Comments
xs:integer		

Table 106: FlagsCoordFormatType Specification

4.2.2.3. Complex Types

4.2.2.3.1. Data_Block_EGG_TRF_2_Type

#	Name/Description	Format
1	EGG_TRF_2	Data_Block_EGG_TRF_2_List_Type

Table 107: Data_Block_EGG_TRF_2_Type Specification

4.2.2.3.2. Data_Block_EGG_TRF_2_List_Type

#	Name/Description	Format
1	List of GG spatial Records	List of GG spatial RecordsType

Table 108: Data_Block_EGG_TRF_2_List_Type Specification

4.2.2.3.3. List_of_GG_spatial_RecordsType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Name/Description	Format
1	GG_spatial_Record	GG_spatial_RecordType Max Occurs : unbounded

Table 109: List_of_GG_spatial_RecordsType Specification

4.2.2.3.4. GG_spatial_RecordType

#	Name/Description	Format
1	Time Information	Time_InformationType
2	Position Geocentric coordinates (latitude, longitude, radial distance)	PositionType
3	Gravity Gradients Externally calibrated gravity gradients in LNOF	XX_YZ_doubleType
4	Sigmas Gravity gradient error estimates	XX_YZ_doubleType
5	Flags Flags for outliers, fill-in gravity gradients for data gaps with flags	FlagsType

Table 110: GG_spatial_RecordType Specification

4.2.2.3.5. Time_InformationType

#	Name/Description	Format
1	GPS_Time	xs:double

Table 111: Time_InformationType Specification

4.2.2.3.6. PositionType

#	Name/Description	Format
1	Radius_from_Geocenter	Radius_from_GeocenterType
2	Phi	PhiType
3	Lambda	LambdaType

Table 112: PositionType Specification

4.2.2.3.7. Radius_from_GeocenterType

#	Name/Description	Format
1	Radius from Geocenter Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 113: Radius_from_GeocenterType Specification

4.2.2.3.8. PhiType

#	Name/Description	Format
1	Phi Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 114: PhiType Specification

4.2.2.3.9. LambdaType

#	Name/Description	Format
1	Lambda Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 115: LambdaType Specification

4.2.2.3.10. XX_YZ_doubleType

Attribute:

Name	Use	Type
unit	optional	xs:string

#	Name/Description	Format
1	XX	xs:double
2	YY	xs:double
3	ZZ	xs:double

#	Name/Description	Format
4	XY	xs:double
5	XZ	xs:double
6	YZ	xs:double

Table 116: XX_YZ_doubleType Specification

4.2.2.3.11. FlagsType

The flags in the data records have the following meaning:

0. Original GGs rotated;
1. As 0. with temporal corrections added;
2. As 1., externally calibrated GGs;
3. Outlier suspected, fill-in provided;
4. Outlier suspected, no fill in; Value is calibrated original value;
5. Data gap, fill-in provided;
6. Data gap, no fill-in. In the nominal case, the flag is 2 for each GG.

#	Name/Description	Format
1	XX	FlagsCoordFormatType
2	YY	FlagsCoordFormatType
3	ZZ	FlagsCoordFormatType
4	XY	FlagsCoordFormatType
5	XZ	FlagsCoordFormatType
6	YZ	FlagsCoordFormatType

Table 117: FlagsType Specification

4.2.3. EGM_GOC_2_DBL

Next provides an overview of how the high level complex structures and basic types are organised to describe the information of an EGM_GOC_2 product type in DBL format:

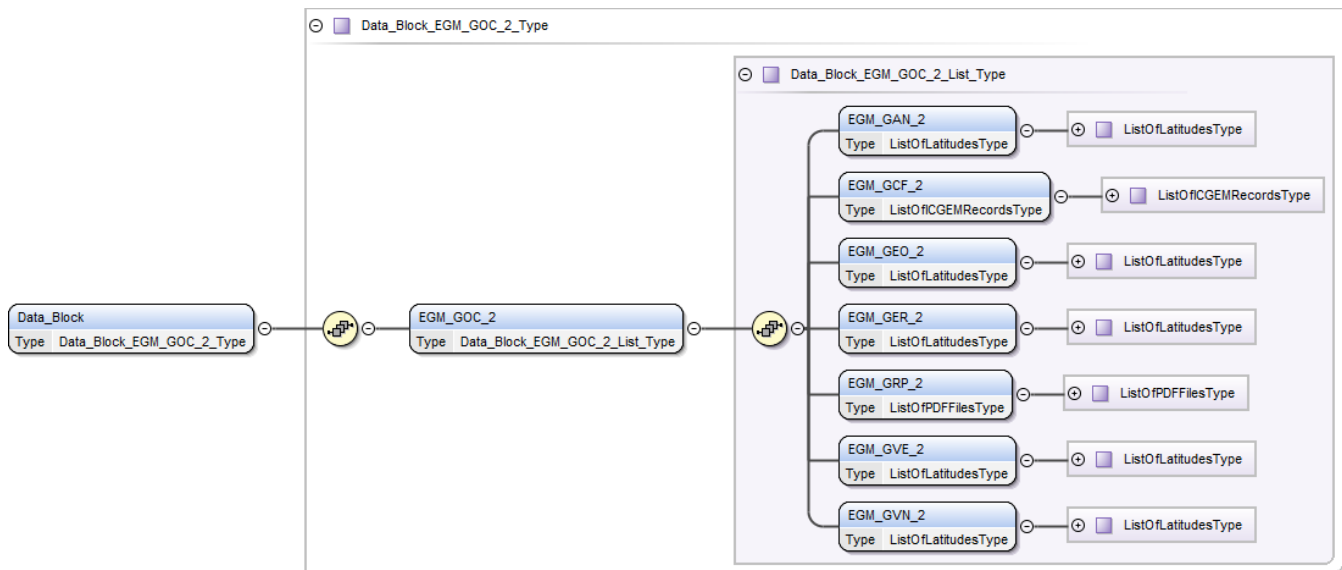


Figure 6: EGM_GOC_2_DBL organisation overview

A detailed description of each complex type used for the representation information of this product type is given below:

4.2.3.1. Root Element

#	Name/Description	Format
1	<p>Data_Block</p> <p>The EGM_GOC_2 products contain GOCE gravity field solutions in different representations. As derived quantities grids of geoid heights, gravity anomalies and deflections of the vertical are additionally included in the following sub-products:</p> <p>EGM_GAN_2 : Gravity anomalies.</p> <p>EGM_GCF_2 : The elementary sub-product is a spherical harmonic series of the gravitational potential of the Earth up to a specific degree and order.</p> <p>EGM_GEO_2 : Geoid heights.</p> <p>EGM_GER_2 : The full variance-covariance matrix of the coefficients is propagated to geoid height errors on a grid.</p> <p>EGM_GRP_2 : Further-on a quality report based on an extensive product validation.</p>	Data_Block_EGM_GOC_2_Type

#	Name/Description	Format
	<p>EGM_GVE_2 : Deflections of the vertical</p> <p>EGM_GVN_2 : Deflections of the vertical</p> <p>Representation: The gravity field is provided as spherical harmonic series up to a specific degree and order. Derived quantities are provided on equi-angular grids. The quality report is provided in PDF format.</p> <p>Reference Frame: EFRF</p> <p>Reference System: GRS80 reference ellipsoid for geoid heights (and errors), gravity anomalies and deflections of the vertical.</p> <p>Time System: Not applicable</p> <p>Spatial Coverage: Spherical harmonic series: global by definition Grids in the area $\pm 83^\circ$ latitude: limited by GOCE inclination ($96,7^\circ$)</p> <p>Temporal Coverage: At least 1 measurement operational phase. It is planned to release one GOCE gravity field model for each measurement operational phase and the final model based on all GOCE data.</p> <p>Spatial Resolution: Spherical harmonic series are provided up to a maximum degree and order, which depends on the data coverage (approximately degree and order 250). Derived quantities are provided as point values on 30'x30' equi-angular grids.</p> <p>Temporal Resolution: Not applicable</p> <p>Units: Spherical harmonic coefficients are dimensionless, Geoid heights and standard deviations in [m], gravity anomalies in [m/s²], deflections of the vertical in [arcsec].</p> <p>Latency: 6 months after completion of each measurement operational phase</p>	

Table 118: Data_Block Specification

4.2.3.2. Complex Types

4.2.3.2.1. Data_Block_EGM_GOC_2_Type

#	Name/Description	Format
1	EGM_GOC_2	Data_Block_EGM_GOC_2_List_Type

Table 119: Data_Block_EGM_GOC_2_Type Specification

4.2.3.2.2. Data_Block_EGM_GOC_2_List_Type

#	Name/Description	Format
1	EGM_GAN_2	ListOfLatitudesType
2	EGM_GCF_2	ListOfICGEMRecordsType
3	EGM_GEO_2	ListOfLatitudesType
4	EGM_GER_2	ListOfLatitudesType
5	EGM_GRP_2	ListOfPDFFilesType
6	EGM_GVE_2	ListOfLatitudesType
7	EGM_GVN_2	ListOfLatitudesType

Table 120: Data_Block_EGM_GOC_2_List_Type Specification

4.2.3.2.3. ListOfLatitudesType

#	Name/Description	Format
1	List_of_Latitudes	List_of_LatitudesType

Table 121: ListOfLatitudesType Specification

4.2.3.2.4. List_of_LatitudesType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Name/Description	Format
1	Latitude	LatitudeType Max Occurs : unbounded

Table 122: List_of_LatitudesType Specification

4.2.3.2.5. ListOfICGEMRecordsType

#	Name/Description	Format
1	List_of_ICGEM_Records	List_of_ICGEM_RecordsType

Table 123: ListOfICGEMRecordsType Specification

4.2.3.2.6. List_of_ICGEM_RecordsType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Name/Description	Format
1	ICGEM_Record	ICGEM_RecordType Max Occurs : unbounded

Table 124: List_of_ICGEM_RecordsType Specification

4.2.3.2.7. ICGEM_RecordType

Attribute:

Name	Use	Type
type	required	xs:string

#	Name/Description	Format
1	Degree	xs:integer
2	Order	xs:integer
3	Clm	xs:double
4	Slm	xs:double
5	Sigmas	SigmasType

Table 125: ICGEM_RecordType Specification

4.2.3.2.8. SigmasType

#	Name/Description	Format
1	C	xs:double
2	S	xs:double

Table 126: SigmasType Specification

4.2.3.2.9. ListOfPDFFilesType

#	Name/Description	Format
1	List of PDF Files	List of PDF Files Type

Table 127: ListOfPDFFilesType Specification

4.2.3.3. List_of_PDF_Files_Type

Attribute:

Name	Use	Type
count	required	xs:integer

#	Name/Description	Format
1	PDF_File	PDF_FileType

Table 128: List_of_PDF_Files_Type Specification

4.2.3.3.1. PDF_FileType

#	Name/Description	Format
1	PDF File Type	xs:base64Binary Attribute: Name: "encoding" Type: "xs:string" Use : "required"

Table 129: PDF_FileType Specification

4.2.3.3.2. LatitudeType

Attribute:

Name	Use	Type
degree	required	xs:float

#	Name/Description	Format
1	List_of_Longitudes	List_of_LongitudesType

Table 130: LatitudeType Specification

4.2.3.3.3. List_of_LongitudesType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Name/Description	Format
1	Longitude	LongitudeType Max Occurs : unbounded

Table 131: List_of_LongitudesType Specification

4.2.3.3.4. LongitudeType

#	Name/Description	Format
1	Value	ValueType

Table 132: LongitudeType Specification

4.2.3.3.5. ValueType

#	Name/Description	Format
1	Value Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 133: ValueType Specification

5. SST Specific Data Structures

This section contains the data structures of the XML schemas used to represent the information of the GOCE L2 products associated to the SST instrument.

5.1. Data Structures for file types in HDR format

5.1.1. SST_PSO_2_HDR

Next provides an overview of how the high level complex structures and basic types are organised to describe the information of an SST_PSO_2 product type in HDR format:

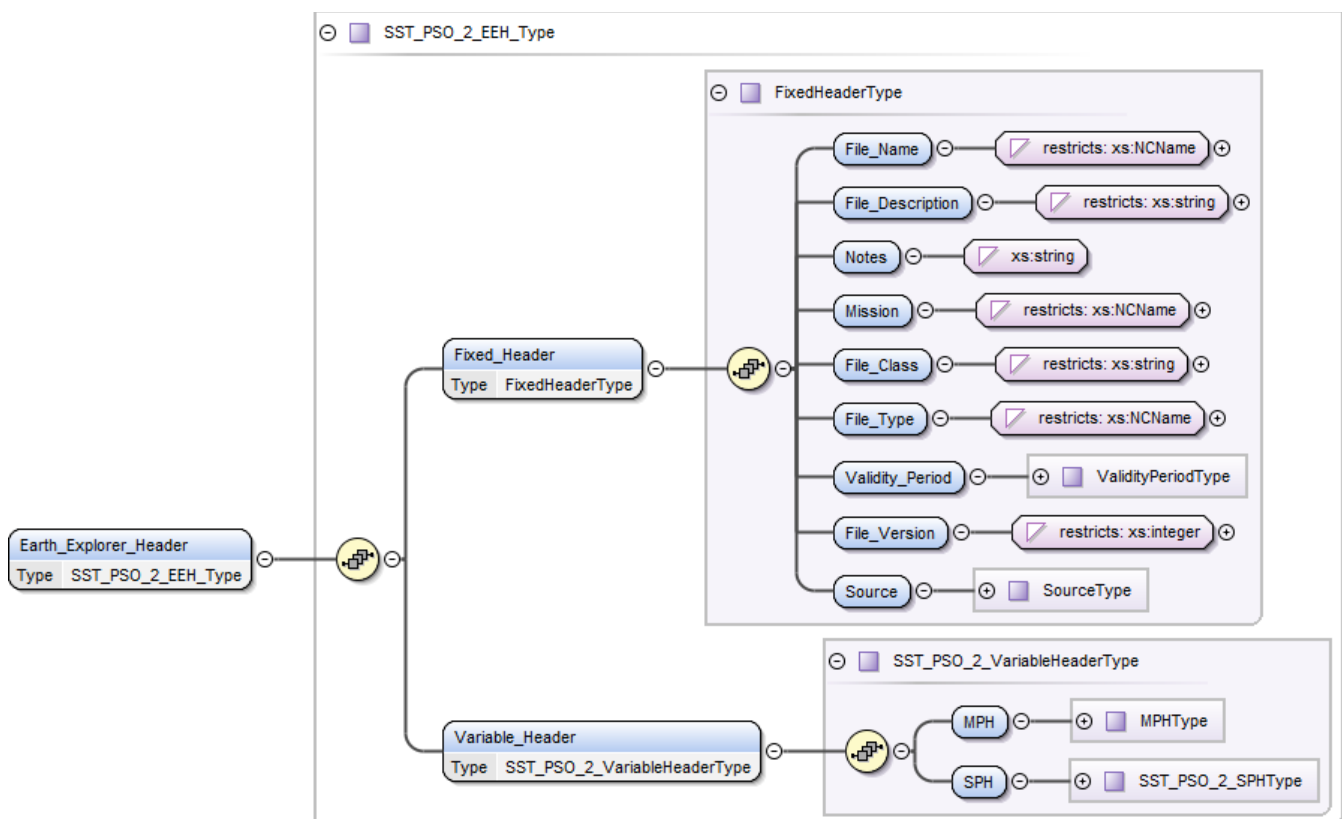


Figure 7: SST_PSO_2_HDR organisation overview

A detailed description of each complex type used for the representation information of this product type is given below:

5.1.1.1. Root Element

#	Name/Description	Format
1	Earth_Explorer_Header The XML Header file contains information identifying the product and is easy to read as based on a standard syntax accessed by common	SST_PSO_2_EEH_Type

#	Name/Description	Format
	<p>tools available for visualizing its content. The XML header file consists of:</p> <ul style="list-style-type: none"> * A fixed header * A variable header <p>The Fixed Header (hereafter called Standard GOCE Header) is the common header for all files produced by the HPF. The Variable Header (hereafter called Product Header) is the header with the format and content depending on the file type and kind of product.</p>	

Table 134: Earth_Explorer_Header Specification

5.1.1.2. Complex Types

5.1.1.2.1. SST_PSO_2_EEH_Type

Earth Explorer Header Header Type for SST_PSO_2

#	Description	Format
1	Fixed_Header	FixedHeaderType
2	Variable_Header	SST_PSO_2_VariableHeaderType

Table 135: SST_PSO_2_EEH_Type Specification

5.1.1.2.2. SST_PSO_2_VariableHeaderType

#	Description	Format
1	MPH	MPHType
2	SPH	SST_PSO_2_SPHType

Table 136: SST_PSO_2_VariableHeaderType Specification

5.1.1.2.3. SST_PSO_2_SPHType

#	Description	Format
1	SPH_Descriptor Name describing the Specific Product Header. Equal to File_Type (see fixed header) Possible values: SST_PSO_2	xs:string
2	Original_Source	Original_SourceType SST_PSO_2
3	Time_Information	Time_InformationType SST_PSO_2
4	SST_PSO_2	SST_PSO_2_SpecificType
5	DSDs	DSDsType

Table 137: SST_PSO_2_SPHType Specification

5.1.1.2.4. Original_SourceType_SST_PSO_2

#	Description	Format
1	Product Prod. name of orig. src. in HPF format	xs:NCName

Table 138: Original_SourceType_SST_PSO_2 Specification

5.1.1.2.5. Time_InformationType_SST_PSO_2

#	Description	Format
1	GPS_Time	GPS_TimeType_SST_PSO_2
2	Abs_Orbit	Abs_OrbitType

Table 139: Time_InformationType_SST_PSO_2 Specification

5.1.1.2.6. GPS_TimeType_SST_PSO_2

#	Description	Format
1	Start	xs:decimal Total Digits : 20 Fraction Digits: 9
2	Stop	xs:decimal Total Digits : 20 Fraction Digits: 9

Table 140: GPS_TimeType_SST_PSO_2 Specification

5.1.1.2.7. Abs_OrbitType

#	Description	Format
1	Start	xs:integer
2	Stop	xs:integer

Table 141: Abs_OrbitType Specification

5.1.1.2.8. DSDsType

#	Description	Format
1	List_of_DSDs Number of Data Sets	List_of_DSDsType

Table 142: DSDsType Specification

5.1.1.2.9. List_of_DSDsType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Description	Format
1	Data_Set_Descriptor	Data_Set_DescriptorType
		Max Occurs : unbounded

Table 143: List_of_DSDsType Specification

5.1.1.2.10. Data_Set_DescriptorType

#	Description	Format
1	Data_Set_Name Name describing the Data Set	xs:string
2	Data_Set_Type Type of Data Set. Possible values: I O S	xs:NCName
3	File_Name Name of Reference File	xs:string Max Length : 62 bytes
4	Num_Epochs	xs:string
5	MD5	xs:string

Table 144: Data_Set_DescriptorType Specification

5.1.1.2.11. SST_PSO_2_SpecificType

#	Description	Format
1	SST_PRP_2	SST_PRP_2Type
2	SST_PKI_2	SST_PKI_2Type
3	SST_PCV_2	SST_PCV_2Type
4	SST_PRD_2	SST_PRD_2Type
5	SST_PRM_2	SST_PRM_2Type

Table 145: SST_PSO_2_SpecificType Specification

5.1.1.2.12. SST_PRP_2Type

#	Description	Format
1	Original_Source	Original_SourceType SST_PRP_2

Table 146: SST_PRP_2Type Specification

5.1.1.2.13. Original_SourceType_SST_PRP_2

#	Description	Format
1	Format	FormatType SST PRP 2

Table 147: Original_SourceType_SST_PRP_2 Specification

5.1.1.2.14. FormatType_SST_PRP_2

#	Description	Format
1	Name Format Name Possible values: PDF	xs:string
2	Version	xs:string

Table 148: FormatType_SST_PRP_2 Specification

5.1.1.2.15. SST_PKI_2Type

#	Description	Format
1	Original_Source	Original_SourceTypeSST_PKI_2
2	Pos_or_Vel Position or Velocity Possible values: P V	xs:string
3	Time Information	Time_InformationType SST_PKI_2
4	Epoch Information	Epoch_InformationType
5	Data Used	xs:string
6	Coordinate Sys	xs:string
7	Orbit_Type	xs:string
8	Agency	xs:string
9	List of Satellite Descriptors	List of Satellite DescriptorsType
10	Base for Pos or Vel	xs:float
11	Base for Clk or Rate	xs:float
12	Comments	xs:string

Table 149: SST_PKI_2Type Specification

5.1.1.2.16. Original_SourceTypeSST_PKI_2

#	Description	Format
1	Format	FormatType SST PKI 2

Table 150: Original_SourceTypeSST_PKI_2 Specification

5.1.1.2.17. FormatType_SST_PKI_2

#	Description	Format
1	Name Format Name Possible values: SP3c	xs:string
2	Version	xs:string
3	Type	xs:string Max Length : 1 bytes

Table 151: FormatType_SST_PKI_2 Specification

5.1.1.2.18. Time_InformationType_SST_PKI_2

#	Description	Format
1	System	xs:string
2	GPS_Time	GPS_TimeType_SST_PKI_2

Table 152: Time_InformationType_SST_PKI_2 Specification

5.1.1.2.19. GPS_TimeType_SST_PKI_2

#	Description	Format
1	Start	GPS_Time_StartType_SST_PKI_2
2	Stop	xs:string

Table 153: GPS_TimeType_SST_PKI_2 Specification

5.1.1.2.20. GPS_Time_StartType_SST_PKI_2

#	Description	Format
1	GPS	GPSType
2	Mod_Jul_Day	Mod_Jul_DayType
3	Gregorian	GregorianType

Table 154: GPS_Time_StartType_SST_PKI_2 Specification

5.1.1.2.21. SST_PCV_2Type

#	Description	Format
1	Original_Source	Original_SourceType_SST_PCV_2
2	Var_Cov_Matrix	Var_Cov_MatrixType
3	Corresponding_Kinematic_Orbit	Corresponding_Kinematic_OrbitType
4	Time_Information	Time_InformationType_SST_PCV_2
5	RMS_of_Unit_Weight	xs:float
6	Parameters	xs:string

Table 155: SST_PCV_2Type Specification

5.1.1.2.22. Original_SourceType_SST_PCV_2

#	Description	Format
1	System	xs:string
2	Creator	xs:string
3	Creator Version	xs:string
4	Creation Date	xs:string
5	Format	FormatType SST_PCV_2

Table 156: Original_SourceType_SST_PCV_2 Specification

5.1.1.2.23. FormatType_SST_PCV_2

#	Description	Format
1	Name Format Name Possible values: Covariance	xs:string
2	Version	xs:string

Table 157: FormatType_SST_PCV_2 Specification

5.1.1.2.24. Var_Cov_MatrixType

#	Description	Format
1	File Name	xs:string

Table 158: Var_Cov_MatrixType Specification

5.1.1.2.25. Corresponding_Kinematic_OrbitType

#	Description	Format
1	File Name	xs:string

Table 159: Corresponding_Kinematic_OrbitType Specification

5.1.1.2.26. Time_InformationType_SST_PCV_2

#	Description	Format
1	System	xs:string
2	Time Step Size	Time Step SizeType
3	GPS Time	GPS TimeType

Table 160: Time_InformationType_SST_PCV_2 Specification

5.1.1.2.27. Time_Step_SizeType

#	Description	Format
1	Time Step Size Type	xs:integer

#	Description	Format
		Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 161: Time_Step_SizeType Specification

5.1.1.2.28. GPS_TimeType

#	Description	Format
1	Start	GPS_Time_StartType
2	Stop	xs:string

Table 162: GPS_TimeType Specification

5.1.1.2.29. SST_PRD_2Type

#	Description	Format
1	Original_Source	Original_SourceType SST_PRD_2
2	Pos_or_Vel Position or Velocity Possible values: P V	xs:string
3	Time_Information	Time_InformationType SST_PRD_2
4	Epoch_Information	Epoch_InformationType
5	Data_Used	xs:string
6	Coordinate_Sys	xs:string
7	Orbit_Type	xs:string
8	Agency	xs:string
9	List_of_Satellite_Descriptors	List_of_Satellite_DescriptorsType
10	Base_for_Pos_or_Vel	xs:float
11	Base_for_Clk_or_Rate	xs:float
12	Comments	xs:string

Table 163: SST_PRD_2Type Specification

5.1.1.2.30. Original_SourceType_SST_PRD_2

#	Description	Format
1	Format	FormatType SST_PRD_2

Table 164: Original_SourceType_SST_PRD_2 Specification

5.1.1.2.31. FormatType_SST_PRD_2

#	Description	Format
1	Name	xs:string

#	Description	Format
	Format Name Possible values: SP3c	
2	Version	xs:string
3	Type	xs:string Max Length : 1 bytes

Table 165: FormatType_SST_PRD_2 Specification

5.1.1.2.32. Time_InformationType_SST_PRD_2

#	Description	Format
1	System	xs:string
2	GPS_Time	GPS_Time_SST_PRD_2

Table 166: Time_InformationType_SST_PRD_2 Specification

5.1.1.2.33. GPS_Time_SST_PRD_2

#	Description	Format
1	Start	GPS_Time_Start_SST_PRD_2
2	Stop	xs:string

Table 167: GPS_Time_SST_PRD_2 Specification

5.1.1.2.34. GPS_Time_Start_SST_PRD_2

#	Description	Format
1	GPS	GPSType
2	Mod_Jul_Day	Mod_Jul_DayType
3	Gregorian	GregorianType

Table 168: GPS_Time_Start_SST_PRD_2 Specification

5.1.1.2.35. GPSType

#	Description	Format
1	Week	xs:integer
2	Seconds_of_Week	xs:decimal

Table 169: GPSType Specification

5.1.1.2.36. Mod_Jul_DayType

#	Description	Format
1	Day	xs:integer
2	Fractional_Day	xs:decimal

Table 170: Mod_Jul_DayType Specification

5.1.1.2.37. Epoch_InformationType

#	Description	Format
1	Num_Epochs	xs:string
2	Interval	xs:float

Table 171: Epoch_InformationType Specification

5.1.1.2.38. List_of_Satellite_DescriptorsType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Description	Format
1	Satellite_Descriptor	Satellite_DescriptorType
		Max Occurs : unbounded

Table 172: List_of_Satellite_DescriptorsType Specification

5.1.1.2.39. Satellite_DescriptorType

#	Description	Format
1	Satellite_ID	xs:string
2	Accuracy	xs:string

Table 173: Satellite_DescriptorType Specification

5.1.1.2.40. SST_PRM_2Type

#	Description	Format
1	Original_Source	Original_SourceType SST_PRM_2
2	Transformation	TransformationType
3	Time_Information	Time_InformationType SST_PRM_2
4	Epoch_Information	Epoch_InformationReferenceType
5	Pole_File	xs:string
6	Nutation	NutationType
7	Subdaily_Model	xs:string

Table 174: SST_PRM_2Type Specification

5.1.1.2.41. Original_SourceType_SST_PRM_2

#	Description	Format
1	System	xs:string
2	Creator	xs:string
3	Creator_Version	xs:string
4	Creation_Date	xs:string

#	Description	Format
5	Format	FormatType SST PRM 2

Table 175: Original_SourceType_SST_PRM_2 Specification

5.1.1.2.42. FormatType_SST_PRM_2

#	Description	Format
1	Name Format Name Possible values: Rotation	xs:string
2	Version	xs:string

Table 176: FormatType_SST_PRM_2 Specification

5.1.1.2.43. TransformationType

#	Description	Format
1	File_Name	xs:string
2	Direction	xs:string

Table 177: TransformationType Specification

5.1.1.2.44. Time_InformationType_SST_PRM_2

#	Description	Format
1	System	xs:string
2	GPS_Time	GPS_TimeType SST PRM 2

Table 178: Time_InformationType_SST_PRM_2 Specification

5.1.1.2.45. GPS_TimeType_SST_PRM_2

#	Description	Format
1	Start	GPS_Time_StartType
2	Stop	xs:string

Table 179: GPS_TimeType_SST_PRM_2 Specification

5.1.1.2.46. GPS_Time_StartType

#	Description	Format
1	Gregorian	GregorianType

Table 180: GPS_Time_StartType Specification

5.1.1.2.47. Epoch_InformationReferenceType

#	Description	Format
1	Reference	xs:string

Table 181: Epoch_InformationReferenceType Specification

5.1.1.2.48. NutationType

#	Description	Format
1	Model	xs:string
2	Offsets	xs:string

Table 182: NutationType Specification

5.1.1.2.49. GregorianType

#	Description	Format
1	Year	xs:integer
2	Month	xs:integer
3	Day of Month	xs:integer
4	Hour	xs:integer
5	Minute	xs:integer
6	Second	xs:float

Table 183: GregorianType Specification

5.2. Data Structures for file types in DBL format

5.2.1. SST_PSO_2_DBL

Next provides an overview of how the high level complex structures and basic types are organised to describe the information of an SST_PSO_2 product type in DBL format:

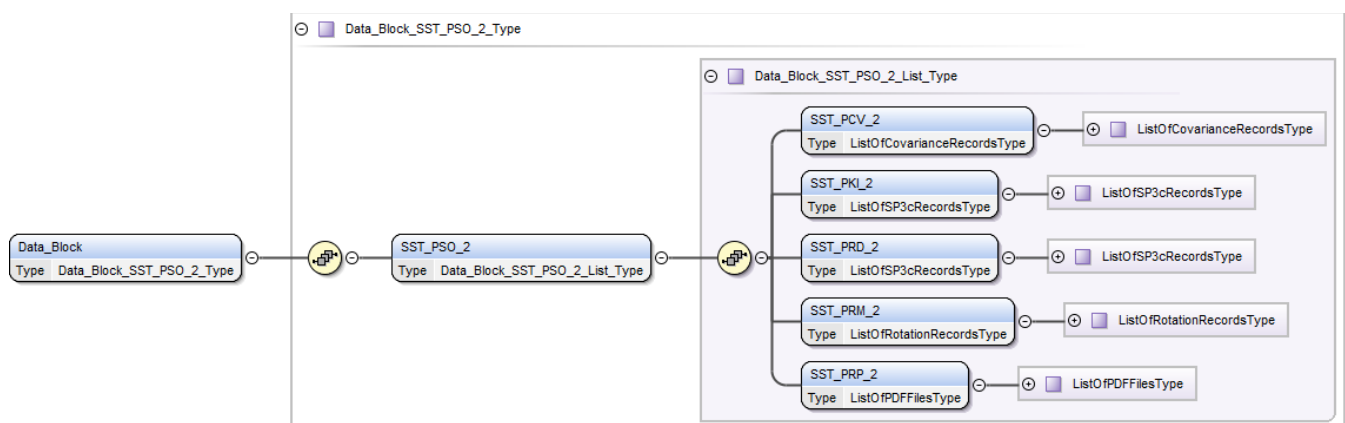


Figure 8: SST_PSO_2_DBL organisation overview

A detailed description of each complex type used for the representation information of this product

type is given below:

5.2.1.1. Root Element

#	Name/Description	Format
1	<p>Data_Block</p> <p>Precise science orbits from reduced-dynamic approach (positions and velocities) and kinematic approach (positions), both in EFRF. Additionally included is variance-covariance information for the kinematic orbits (a moving window is used for the covariances with a length of 9 consecutive epochs) and the rotation matrix for each epoch from the EFRF to the IRF in terms of quaternions. Furthermore a quality report based on the daily orbit solutions is included in the product.</p> <p>Representation: Orbits, variance-covariance matrices and rotation matrices are provided as time series, the quality report in PDF format.</p> <p>Reference Frame: EFRF</p> <p>Time System: GPS time</p> <p>Spatial Coverage: Global along satellite tracks</p> <p>Temporal Coverage: 1 day</p> <p>Spatial Resolution: 8 km along-track</p> <p>Temporal Resolution: 1 s</p> <p>Units: Positions [m], velocities [m/s], rotation angles [dimensionless]</p> <p>Latency: 4 weeks</p>	Data_Block_SST_PSO_2_Type

Table 184: Data_Block Specification

5.2.1.2. Complex Types

5.2.1.2.1. Data_Block_SST_PSO_2_Type

#	Name/Description	Format
1	SST_PSO_2	Data_Block_SST_PSO_2_List_Type

Table 185: Data_Block_SST_PSO_2_Type Specification

5.2.1.2.2. Data_Block_SST_PSO_2_List_Type

#	Name/Description	Format
1	SST_PCV_2	ListOfCovarianceRecordsType
2	SST_PKI_2	ListOfSP3cRecordsType
3	SST_PRD_2	ListOfSP3cRecordsType
4	SST_PRM_2	ListOfRotationRecordsType
5	SST_PRP_2	ListOfPDFFilesType

Table 186: Data_Block_SST_PSO_2_List_Type Specification

5.2.1.2.3. ListOfCovarianceRecordsType

#	Name/Description	Format
1	List_of_Covariance_Records The variance-covariance information for the position estimates is included for a moving window covering nine consecutive epochs.	List_of_Covariance_RecordsType

Table 187: ListOfCovarianceRecordsType Specification

5.2.1.2.4. List_of_Covariance_RecordsType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Name/Description	Format
1	Covariance_Record	Covariance_RecordType Max Occurs : unbounded

Table 188: List_of_Covariance_RecordsType Specification

5.2.1.2.5. Covariance_RecordType

#	Name/Description	Format
1	Covariance Record Type	xs:double Attribute: Name: "row" Type: "xs:integer" Use : "required" Attribute: Name: "column" Type: "xs:integer" Use : "required"

Table 189: Covariance_RecordType Specification

5.2.1.2.6. ListOfSP3cRecordsType

#	Name/Description	Format
1	List_of_SP3c_Records	List_of_SP3c_RecordsType

Table 190: ListOfSP3cRecordsType Specification

5.2.1.2.7. List_of_SP3c_RecordsType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Name/Description	Format
1	SP3c_Record	SP3c_RecordType Max Occurs : unbounded

Table 191: List_of_SP3c_RecordsType Specification

5.2.1.2.8. SP3c_RecordType

#	Name/Description	Format
1	Time Information	Time InformationType
2	List of Satellite IDs	List of Satellite IDSType

Table 192: SP3c_RecordType Specification

5.2.1.2.9. Time_InformationType

#	Name/Description	Format
1	GPS_Time	GPS_TimeType

Table 193: Time_InformationType Specification

5.2.1.2.10. GPS_TimeType

#	Name/Description	Format
1	Start	GPS_Time_StartType

Table 194: GPS_TimeType Specification

5.2.1.2.11. GPS_Time_StartType

#	Name/Description	Format
1	Gregorian	GregorianType

Table 195: GPS_Time_StartType Specification

5.2.1.2.12. GregorianType

#	Name/Description	Format
1	Year	xs:integer
2	Month	xs:integer
3	Day of Month	xs:integer
4	Hour	xs:integer
5	Minute	xs:integer
6	Second	xs:float

Table 196: GregorianType Specification

5.2.1.2.13. List_of_Satellite_IDSType

#	Name/Description	Format
1	L15	L15Type

Table 197: List_of_Satellite_IDSType Specification

5.2.1.2.14. L15Type

#	Name/Description	Format
1	Position	L15_PositionType
2	Velocity	L15_VelocityType Min Occurs : 0
3	Clock	ClockType
4	Clock_Change_Rate	Clock_Change_RateType Min Occurs : 0
5	Standard_Deviations	Standard_DeviationsType
6	Flags	xs:string

Table 198: L15Type Specification

5.2.1.2.15. L15_PositionType

Attribute:

Name	Use	Type
unit	required	xs:string

#	Name/Description	Format
1	X	xs:float
2	Y	xs:float
3	Z	xs:float

Table 199: L15_PositionType Specification

5.2.1.2.16. L15_VelocityType

Attribute:

Name	Use	Type
unit	required	xs:string

#	Name/Description	Format
1	X	xs:float
2	Y	xs:float
3	Z	xs:float

Table 200: L15_VelocityType Specification

5.2.1.2.17. Standard_DeviationsType

#	Name/Description	Format
1	Position	PositionType
2	Velocity	VelocityType Min Occurs : 0
3	Clock	ClockType
4	Clock_Change_Rate	Clock_Change_RateType Min Occurs : 0

Table 201: Standard_DeviationsType Specification

5.2.1.2.18. PositionType

#	Name/Description	Format
1	Position Type	xs:float

#	Name/Description	Format
		Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 202: PositionType Specification

5.2.1.2.19. VelocityType

#	Name/Description	Format
1	Velocity Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 203: VelocityType Specification

5.2.1.2.20. ClockType

#	Name/Description	Format
1	Clock Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 204: ClockType Specification

5.2.1.2.21. Clock_Change_RateType

#	Name/Description	Format
1	Clock Change Rate Type	xs:float Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 205: Clock_Change_RateType Specification

5.2.1.2.22. ListOfRotationRecordsType

#	Name/Description	Format
1	List_of_Rotation_Records Rotation matrix between the EFRF and the IRF (to support the use of the orbit solutions in the IRF)	List_of_Rotation_RecordsType

Table 206: ListOfRotationRecordsType Specification

5.2.1.2.23. List_of_Rotation_RecordsType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Name/Description	Format
1	Rotation_Record	Rotation_RecordType Max Occurs : unbounded

Table 207: List_of_Rotation_RecordsType Specification

5.2.1.2.24. Rotation_RecordType

#	Name/Description	Format
1	Time_Information	Rotation_Time_InformationType
2	Quaternions	QuaternionsType

Table 208: Rotation_RecordType Specification

5.2.1.2.25. Rotation_Time_InformationType

#	Name/Description	Format
1	Time_Since_Reference_Epoch	Time_Since_Reference_EpochType

Table 209: Rotation_Time_InformationType Specification

5.2.1.2.26. Time_Since_Reference_EpochType

#	Name/Description	Format
1	Time Since Reference Epoch Type	xs:integer Attribute: Name: "unit" Type: "xs:string" Use : "required"

Table 210: Time_Since_Reference_EpochType Specification

5.2.1.2.27. QuaternionsType

#	Name/Description	Format
1	Q1	xs:float
2	Q2	xs:float
3	Q3	xs:float
4	Q4	xs:float

Table 211: QuaternionsType Specification

5.2.1.2.28. ListOfPDFFilesType

#	Name/Description	Format
1	List_of_PDF_Files	List_of_PDF_FilesType

Table 212: ListOfPDFFilesType Specification

5.2.1.2.29. List_of_PDF_FilesType

Attribute:

Name	Use	Type
count	required	xs:integer

#	Name/Description	Format
1	PDF_File The quality report (in PDF format) gives information about the accuracy of the PSO solutions. It also includes an independent quality assessment of the orbits using the SLR measurements to the GOCE satellite as well as a comparison with independently derived quick-look orbit solutions, referred to as Rapid Science orbits (RSO).	PDF_FileType

Table 213: List_of_PDF_FilesType Specification

5.2.1.2.30. PDF_FileType

#	Name/Description	Format
1	Type of the PDF File.	xs:base64Binary Attribute: Name: "encoding" Type: "xs:string" Use : "required"

Table 214: PDF_FileType Specification