

***MSG Level 1.5 BSQ Format  
File Definition***

# 1. MSG LEVEL 1.5 BSQ FORMAT

## 1.1.1 Product file structure :

*{OutputProduct}* : single file.

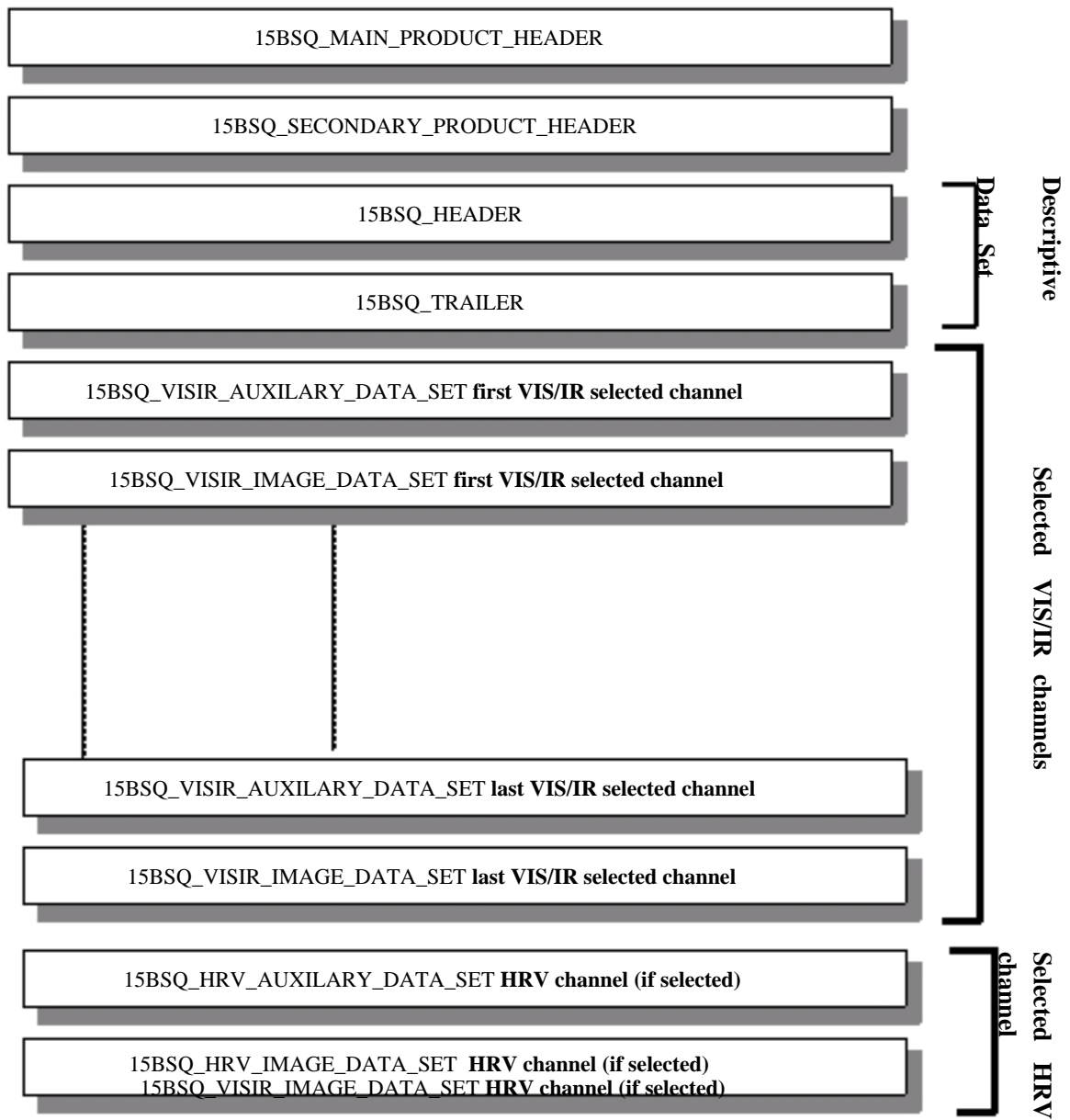
## 1.1.2 Product name :

*{OutProductName}* = MSGn-*{AIID}*-15-*{AVBA}*-*{AVPA}*-  
YYYYMMDDHHMM-*OrderId*.bsq

Example : MSG1-SEVI-15-NA-NA-200007100000-9999.bsq

## 1.1.3 Product internal format :

### 1.1.3.1 MSG15 BSQ format definition



## 15BSQ\_MAIN\_PRODUCT\_HEADER definition

```
15BSQ_MAIN_PRODUCT_HEADER ::= RECORD
  {FormatName           15_PH_DATA,
   FormatDocumentName   15_PH_DATA,
   FormatDocumentMajorVersion 15_PH_DATA,
   FormatDocumentMinorVersion 15_PH_DATA,
   CreationDateTime     15_PH_DATA,
   CreatingCentre       15_PH_DATA,
   DataSetIdentification ARRAY SIZE(1..27) OF 15_PH_DATA_IDENTIFICATION,
   TotalFileSize       15_PH_DATA,
   GORT                15_PH_DATA,
   ASTI                15_PH_DATA,
   LLOS                15_PH_DATA,
   SNIT                15_PH_DATA,
   AIID                15_PH_DATA,
   SSBT                15_PH_DATA,
   SSST                15_PH_DATA,
   RRCC                15_PH_DATA,
   RRBT                15_PH_DATA,
   RRST                15_PH_DATA,
   PPRC                15_PH_DATA,
   PPDT                15_PH_DATA,
   GPLV                15_PH_DATA,
   APNM                15_PH_DATA,
   AARF                15_PH_DATA,
   UUDT                15_PH_DATA,
   QQOV                15_PH_DATA,
   UDSP                15_PH_DATA}
```

For GORT, ASTI, LLOS, SNIT, AIID, SSBT, SSST, RRCC, RRBT, RRST, PPRC, PPDT, GPLV, APNM, AARF, UUDT, QQOV, UDSP, these attributes are defined in Appendix B.

Detailed description of the *DataSetIdentification* array:

Field 1: Main product header identification.

Field 2: Second product header identification.

Field 3: Header-Trailer identification.

Field 4: Auxiliary data set identification for band 1.

Field 5: Image data set identification for band 1.

Field 26: Auxiliary data set identification for band 12.

Field 27: Image data set identification for band 12.

The fields 4 to 27 are filled with zero values if the related bands are missing.

An example of MPH is given in APPENDIX A.

### 1.1.3.2 15BSQ\_SECONDARY\_PRODUCT\_HEADER definition

```
15BSQ_SECONDARY_PRODUCT_HEADER ::= RECORD
    { ABID                15_PH_DATA,
      SMOD                15_PH_DATA,
      APXS                15_PH_DATA,
      AVPA                15_PH_DATA,
      LSCD                15_PH_DATA,
      LMAP                15_PH_DATA,
      QDLC                15_PH_DATA,
      QDLP                15_PH_DATA,
      QQAI                15_PH_DATA,
      SelectedBandIDs    15_PH_DATA,
      SouthLineSelectedRectangle 15_PH_DATA,
      NorthLineSelectedRectangle 15_PH_DATA,
      EastColumnSelectedRectangle 15_PH_DATA,
      WestColumnSelectedRectangle 15_PH_DATA,
      NumberLinesVISIR   15_PH_DATA,
      NumberColumnsVISIR 15_PH_DATA,
      NumberLinesHRV     15_PH_DATA,
      NumberColumnsHRV   15_PH_DATA }
```

For ABID, SMOD, APXS, AVPA, LSCD, LMAP, QDLC, QDLP, QQAI, these attributes are defined in Appendix B.

An example of SPH is given in APPENDIX A.

### 4.4.3.3 15BSQ\_HEADER definition

```
15BSQ_HEADER ::= RECORD
    { 15HEADERVersion    UNSIGNED BYTE(0),
      SatelliteStatus_Record  SatelliteStatus,
      ImageAcquisition_Record  ImageAcquisition,
      CelestialEvents_Record  CelestialEvents,
      ImageDescription_Record  ImageDescription,
      GeometricProcessing_Record  GeometricProcessing,
      RadiometricProcessing_Record  RadiometricProcessing,
      IMPFConfiguration_Record  IMPFConfiguration }
```

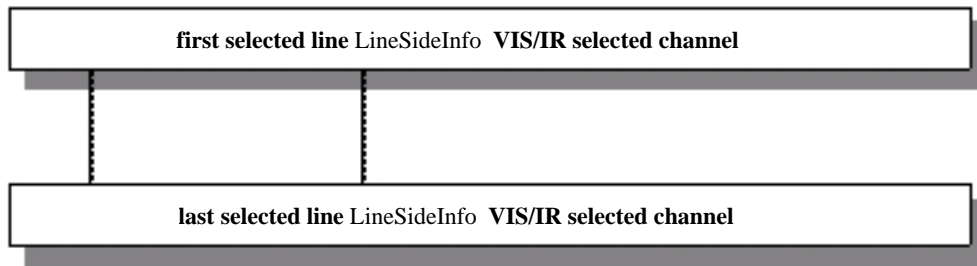
15BSQ\_HEADER is identical to 15HEADER of Native format. The different records structure is described in ICD/003 §4.3.2, 4.3.3, 4.3.4.

### 1.1.3.4 15BSQ\_TRAILER definition

15BSQ_TRAILER ::= RECORD	
{ 15TRAILERVersion	UNSIGNED BYTE(0),
ImageProductionStats_Record	ImageProductionStats,
NavigationExtractionResults_Record	NavigationExtractionResults,
RadiometricQuality_Record	RadiometricQuality,
GeometricQuality_Record	GeometricQuality,
TimelinessAndCompleteness_Record	TimelinessAndCompleteness }

15BSQ\_TRAILER is identical to 15TRAILER of Native format. The different records structure is described in ICD/003 §4.3.2, 4.3.3, 4.3.4.

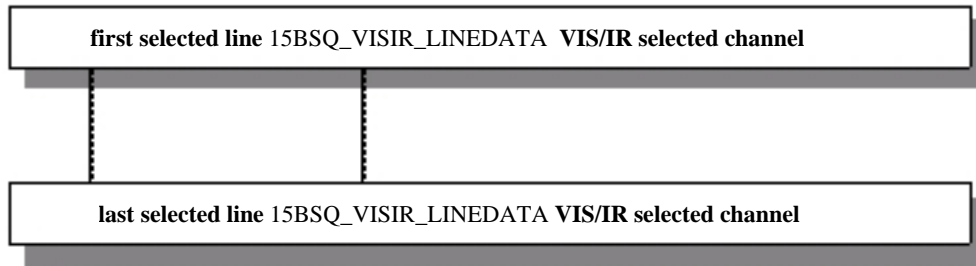
### 1.1.3.5 15BSQ\_VISIR\_AUXILARY\_DATA\_SET definition



15BSQ_VISIR_AUXILARY_DATA_SET ::= RECORD	
{ AuxiliaryData	ARRAY OF LineSideInfo }

The LineSideInfo structure is described in ICD/003 §4.3.3.

### 1.1.3.6 15BSQ\_VISIR\_IMAGE\_DATA\_SET definition



```
15BSQ_VISIR_IMAGE_DATA_SET ::= RECORD
  { ImageData          ARRAY OF 15BSQ_VISIR_LINEDATA }
```

```
15BSQ_VISIR_LINEDATA ::= RECORD
  { LineData          ARRAY OF UNSIGNED(16) }
```

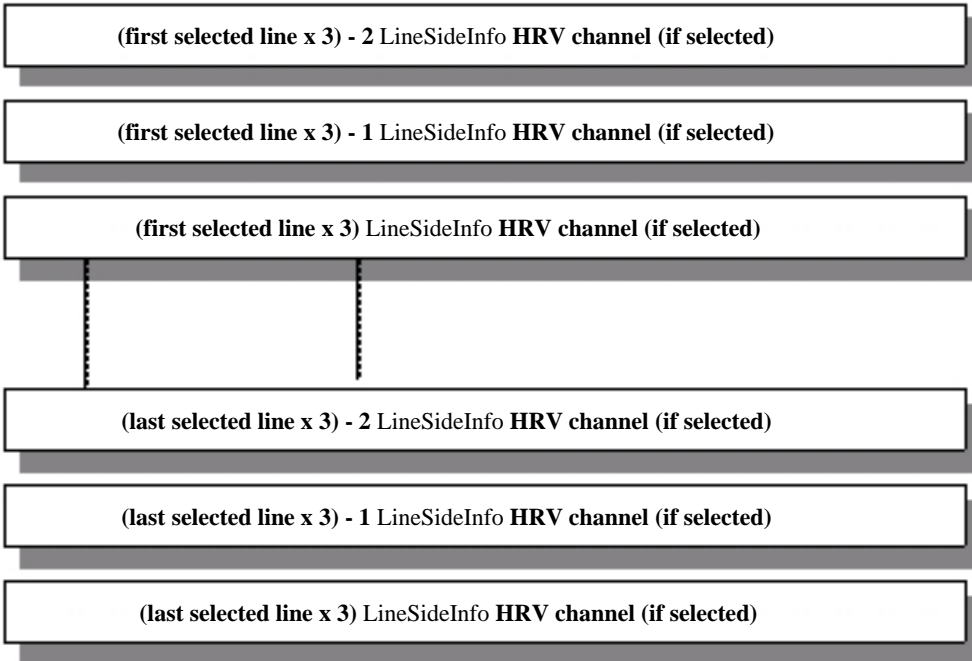
LineData size :

*numOfPixels* multiplied by *sizeOfPixel*.

numOfPixels: number of pixels defined in the subsetting rectangle defined in  
15BSQ\_SECONDARY\_PRODUCT\_HEADER

sizeOfPixel: pixel size in output file ( = 2).

### 1.1.3.7 15BSQ\_HRV\_AUXILARY\_DATA\_SET definition

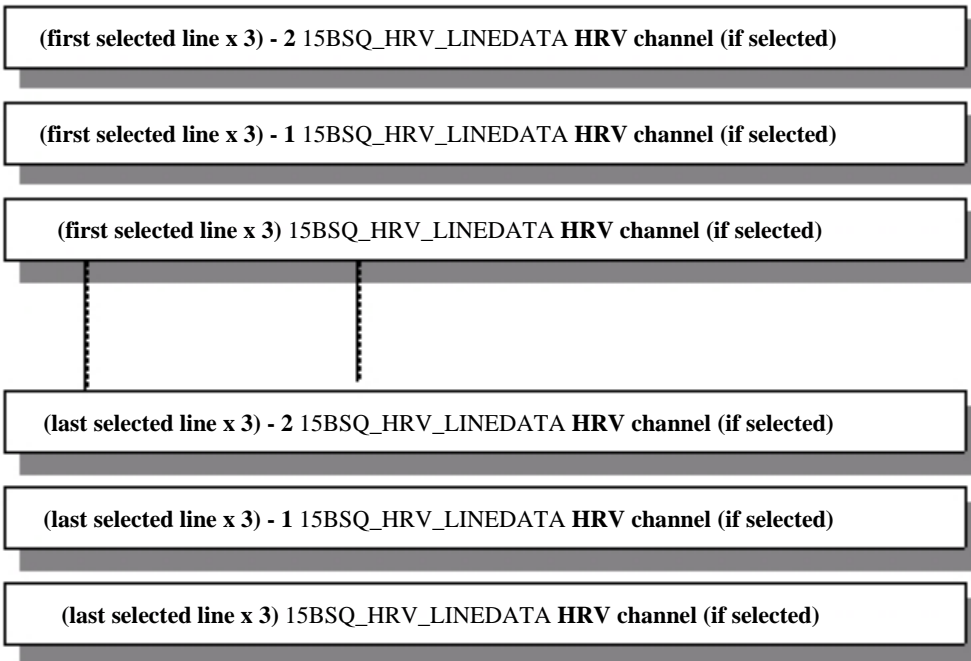


```
15BSQ_HRV_AUXILARY_DATA_SET ::= RECORD  
  {AuxiliaryData      ARRAY OF LineSideInfo}
```

The LineSideInfo structure is described in ICD/003 §4.3.3.



### 1.1.3.8 15BSQ\_HRV\_IMAGE\_DATA\_SET definition



```
15BSQ_HRV_IMAGE_DATA_SET ::= RECORD
    {ImageData      ARRAY OF 15BSQ_HRV_LINEDATA}
```

```
15BSQ_HRV_LINEDATA ::= RECORD
    {LineData      ARRAY OF UNSIGNED(16)}
```

LineData size :

- without geographic subsetting:  
*numOfPixels* multiplied by *resolutionRatio* multiplied by *sizeOfPixel* divided by 2  
 (only half of a line is transmitted).
- with geographic subsetting:  
*numOfPixels* multiplied by *resolutionRatio* multiplied by *sizeOfPixel*.

numOfPixels: number of pixels defined in the subsetting rectangle defined in  
 15BSQ\_SECONDARY\_PRODUCT\_HEADER

resolutionRatio: ratio resolution between VIS/IR and HRV (= 3).

sizeOfPixel: pixel size in output file (= 2).

### 1.1.3.9 Geographic subsetting

The way to extract the useful geo-subsetting rectangle is the same as the one described for the MSG Level 1.5 Native format in §4.2.3.9