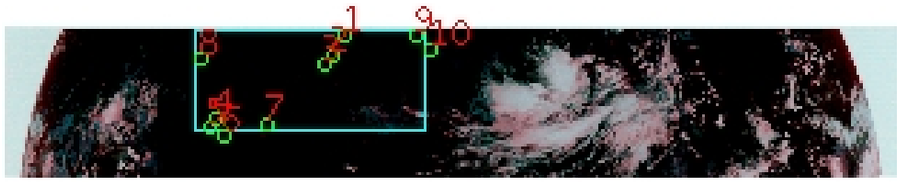
# DQE Report: Location Accuracy of INSAT-3DR-IMG RAPID_SCAN Product 3RIMG_19SEP2018_0615

| | | | | | |
|---|---|---|---|---|---|
| **Satellite** | INSAT-3DR | **No Of Bands** | 6 | **Product Type** | RAPID_SCAN |
| **Sensor** | IMG | **LvlOfProcess** | L1B | **Selected Band** | 2-TIR1 |
| **DOP/Time** | 19-09-18/06:15 | **Station ID** | BES | **Field View(deg)** | 18.006 |
| **Res(Y,X) [Km]** | (4.0,4.0) | **Res(Y,X) [uRad]** | (112.0,112.0) | | |

(81.153N,-7.132W) (81.153N,155.078E)




(-81.013S,-7.132W) (-81.013S,155.078E)

GCP Distribution overview for 3RIMG19SEP20180615L1BDQE

**Image Width:** 2805 **Image Height:** 2816 **No Of GCPs:** 10

**GCP Coverage(%)** 11.03 **(N-S)** 25.85 **(E-W)**

**Location Error(E)**

Legend —0Km < E <= 50Km —50Km < E <= 100Km —E >100Km

## Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|---|---|---|---|---|
| Along | 9.568 | N | 0.882 | 9.609 |
| Across | -27.849 | W | 1.980 | 27.919 |

## Radial Error (in IR Pixels)

| | |
|---|---|
| **Mean** | 29.461 |
| **Min** | 26.657 |
| **Max** | 33.322 |
| **CE90** | 31.258 |

## Scale (Km)

| | Pixel Size | Stddev | %variation |
|---|---|---|---|
| Average | 4.357 | 0.275 | 8.930 |
| Along | 4.669 | 1.799 | 16.726 |
| Across | 4.486 | 0.323 | 12.146 |

## Internal Distortion (in IR Pixels)

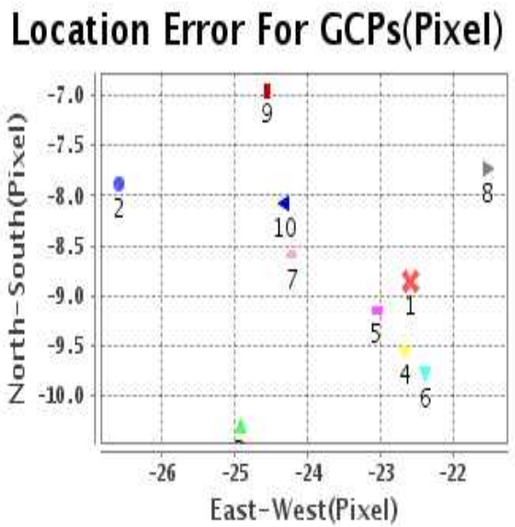
| | PeakToPeak | Mean | Stddev | RMS |
|---|---|---|---|---|
| Along | 3.361 | -0.191 | 1.04 | 1.061 |
| Across | 4.205 | 2.400 | 1.30 | 2.730 |

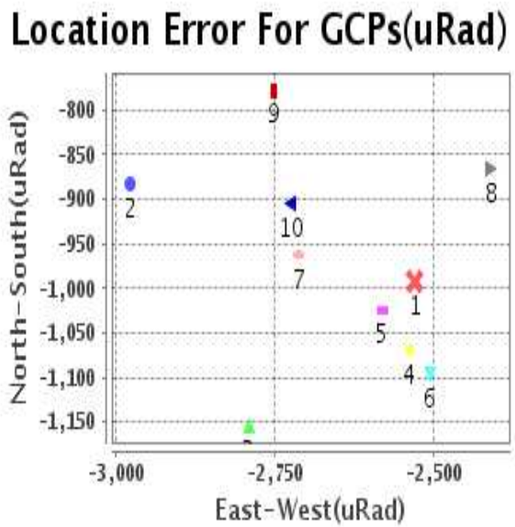
## Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|---|---|---|
| -0.15764 | -0.05659 | -0.07320 |

## Reference Used

| Sensor | Resolution | Projection |
|---|---|---|
| ETM | 500.00 | GGP |



# Detailed Product Information

## Ancillary Info

| | | | |
|---|---|---|---|
| Satellite | INSAT-3DR | Generation Date | 19-09-18 |
| Sensor | IMG | DQE Date | 25-09-2018 |
| PassType | NONE | Aquisition Date | 19-09-18 |
| Imaging Mode | NORMAL_FRAM | Aquisition Time(GMT) | 06:15 |
| Sat Altitude(m) | 3.6E7 | Nominal Altitude(Km) | 3.6E7 |
| Station | BES | Predicted Altitude(Km) | -999.99 |
| Sat Location(deg) | -999.99 E | Nominal Center Lat(deg) | 0.0 |
| Format | hdf5-1.8.8 | Nominal Center Lon(deg) | 74.0 |
| LvlOfProcessing | RAPID_SCAN | Predicted Center Lat(deg) | -999.99 |
| DP JobId | 3RIMG_19SEP20 | Predicted Center Lon(deg) | -999.99 |
| ProductCode | NONE | | |
| Field View(deg) | 18.006 | | |

## Projection Parameters

| | |
|---|---|
| Projection | None |
| Ellipsoid | WGS_84 |
| Datum | WGS_84 |
| Zone | NotAvail |
| Semi_Major_Axis(Km) | 6378.14 |
| Semi_Minor_Axis(Km) | 6356.75 |
| Standard_Parallel1(deg) | -999.99 |
| Standard_Parallel2(deg) | -999.99 |
| Projection_Origin_Lon(deg) | -999.99 |
| Projection_Origin_Lat(deg) | -999.99 |
| Projection_False_Easting(Km) | -999.99 |
| Projection_False_Northing(Km) | -999.99 |

## Scene Center Desc

| | |
|---|---|
| Centre Lat(deg) | 0.07 |
| Center Lon(deg) | 73.973 |
| Centre Roll(deg) | -999.0 |
| Centre Pitch(deg) | -999.0 |
| Center Yaw(deg) | -999.0 |
| SunElevation(deg) | -999.99 |
| SunAzimuth(deg) | -999.99 |
| SatElevation(deg) | -999.99 |
| SatAzimuth(deg) | -999.99 |

## Scene Corner Desc

| | |
|---|---|
| NW_Lat(deg) | 81.153 |
| NW_Lon(deg) | -7.132 |
| SW_Lat(deg) | -81.013 |
| SW_Lon(deg) | -7.132 |
| NE_Lat(deg) | 81.153 |
| NE_Lon(deg) | 155.078 |
| SE_Lat(deg) | -81.013 |
| SE_Lon(deg) | 155.078 |

## Band Wise Details

| | Res_AL(Km) | Res_AX(Km) | Image Height | Image Width |
|---|---|---|---|---|
| MIR | 4.0 | 4.0 | 2816 | 2805 |
| SWIR | 1.0 | 1.0 | 11264 | 11220 |
| TIR1 | 4.0 | 4.0 | 2816 | 2805 |
| TIR2 | 4.0 | 4.0 | 2816 | 2805 |
| VIS | 1.0 | 1.0 | 11264 | 11220 |
| WV | 8.0 | 8.0 | 1408 | 1402 |

## GDQE Computation Base

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Projection | MER | Wildpoint Rejection Threshold | 2.60 -sigma | SemiMajorAxis(m) | 6378137.00 | Mode Of Computation | grid |
| Ellipsoid | WGS_84 | | | SemiMinorAxis(m) | 6356752.31 | Used Reference Type | REFINSREF |
| Datum | WGS_84 | Unit | meters | Standardparallel1(deg) | 17.0 | | |
| Zone | Not Applicable | | | Standardparallel2(deg) | 17.0 | | |

* -999.99 : Not Applicable/Not Available

# References

**JobId :** **3RIMG19SEP20180615L1BDQE**

(-999.99 - Not Available/Not Computed)

| Ref.No | Source | File Name | Resolution ( m ) | Projection |
|---|---|---|---|---|
| 1 | ETM | world_Band1.img | 500.0 | GGP |

# Location Accuracy

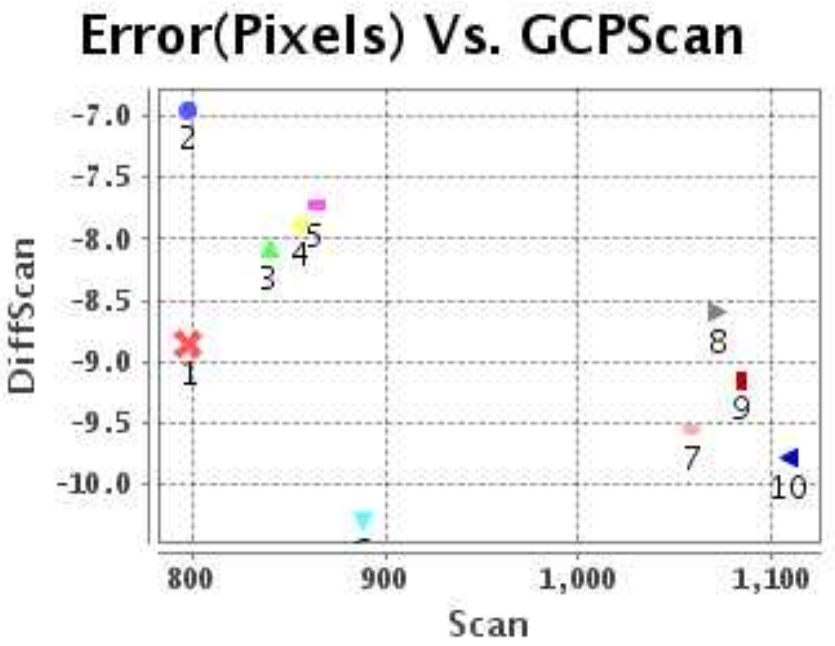
## GCP Distribution Statistics

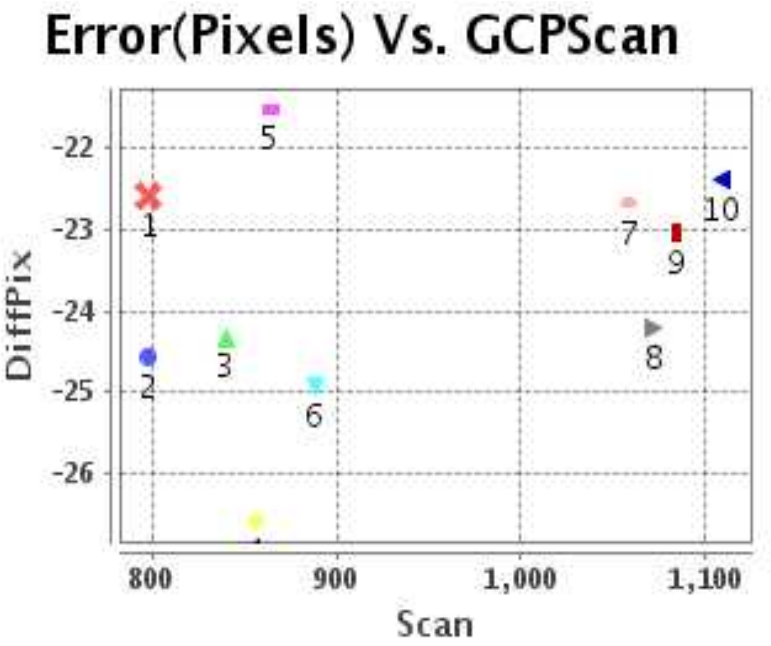
**Image Width (pixels) :** 2805 **Image Height (pixels) :** 2816 **No of GCPs :** 10

| | Mean | StdDev | Min | Max | Coverage(in %) |
|---|---|---|---|---|---|
| **GCP Scan** | 936.9 | 120.9 | 798.2 | 1108.75 | 11.03 (N-S) |
| **GCP Pix** | 906.6 | 256.2 | 604.2 | 1329.25 | 25.85 (E-W) |

## Identified Control Point details : ( Differences are Reference - Product )

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 798.2 | 1054.2 | -8.9 | -22.59 | 41.713 | N | 102.605 | W | Accepted |
| 2 | 856.2 | 1023.8 | -7.9 | -26.59 | 35.965 | N | 116.773 | W | Accepted |
| 3 | 888.5 | 998.8 | -10.3 | -24.92 | 44.958 | N | 109.785 | W | Accepted |
| 4 | 1058.2 | 652.2 | -9.6 | -22.67 | 40.328 | N | 115.042 | W | Accepted |
| 5 | 1084.5 | 633.0 | -9.1 | -23.05 | 37.340 | N | 119.325 | W | Accepted |
| 6 | 1108.8 | 676.5 | -9.8 | -22.38 | 38.607 | N | 109.134 | W | Accepted |
| 7 | 1072.0 | 812.0 | -8.6 | -24.22 | 36.488 | N | 110.930 | W | Accepted |
| 8 | 864.0 | 604.2 | -7.7 | -21.52 | 40.171 | N | 127.089 | W | Accepted |
| 9 | 798.2 | 1281.8 | -6.9 | -24.56 | 31.762 | N | 101.789 | W | Accepted |
| 10 | 840.2 | 1329.2 | -8.1 | -24.33 | 35.390 | N | 101.486 | W | Accepted |



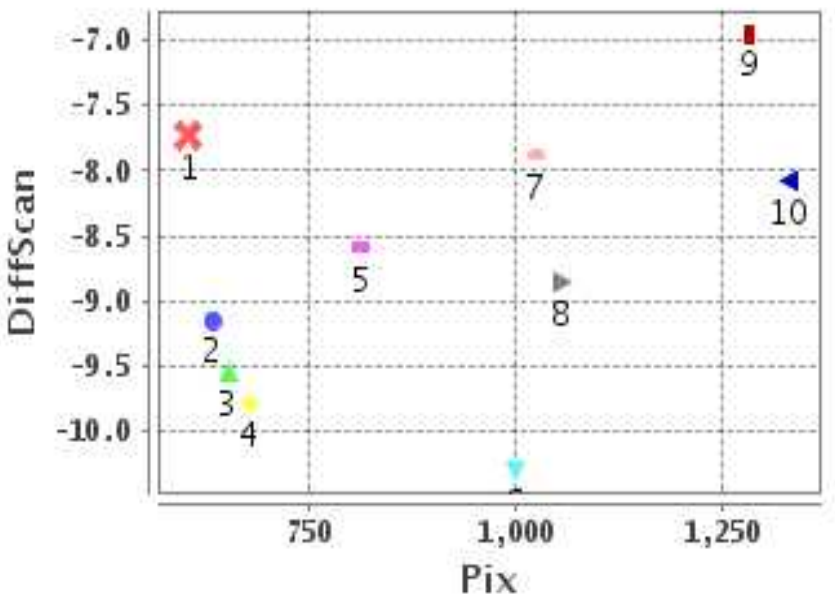



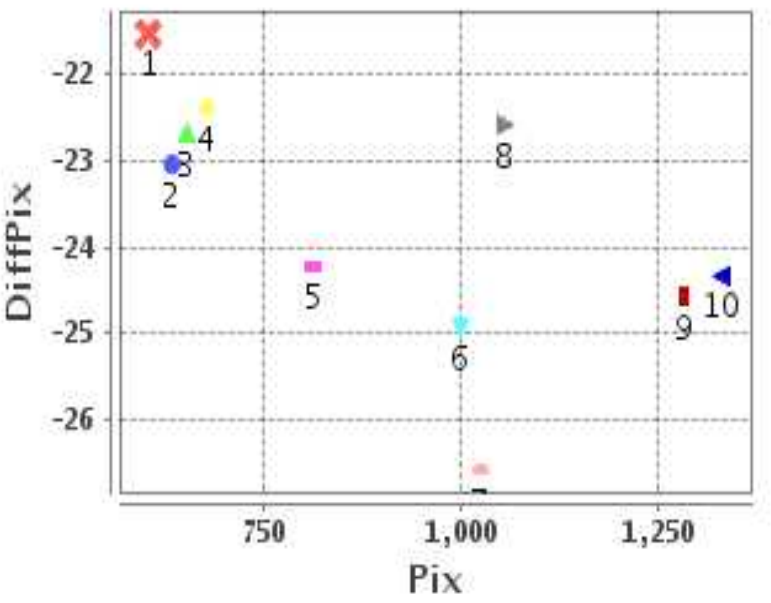

**Number Of Points**

| | |
|---|---|
| North | 10 |
| South | 0 |
| East | 0 |
| West | 10 |

**Radial Error ( Km**

| | |
|---|---|
| Mean | 29.461 |
| Min | 26.657 |
| Max | 33.322 |
| CE90 | 31.258 |




**Location Accuracy**

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---|---|---|---|---|---|---|
| Along( Km ) | 9.568 | 0.882 | 9.609 | N | 9.410 | 9.776 |
| Across ( Km ) | -27.849 | 1.980 | 27.919 | W | 27.458 | 28.188 |

# Block-Wise Geo location Error Statistics

## Location Accuracy,Scale,ID

**Scan Range-0-937; Pix Range-0-934**

| | | |
|---|---|---|
| **Number of GCPs** | 1 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | 40.17 | N |
| **Across(Mean,Dir)** | -127.09 | W |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | -999.99 | -999.9 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -999.99 | -999.99 |
| **Across(Mean,Stddev)** | -999.99 | -999.99 |

**Scan Range-0-937; Pix Range-934-1869**

| | | |
|---|---|---|
| **Number of GCPs** | 5 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | 37.956 | N |
| **Across(Mean,Dir)** | -106.49 | W |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | 4.25 | 6.35 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -0.56 | 1.23 |
| **Across(Mean,Stddev)** | -0.41 | 1.42 |

**Scan Range-0-937; Pix Range-1869-2805**

| | | |
|---|---|---|
| **Number of GCPs** | -999 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | -999.99 | NotAvail |
| **Across(Mean,Dir)** | -999.99 | NotAvail |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | -999.99 | -999.9 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -999.99 | -999.99 |
| **Across(Mean,Stddev)** | -999.99 | -999.99 |

**Scan Range-937-1876; Pix Range-0-934**

| | | |
|---|---|---|
| **Number of GCPs** | 4 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | 38.19 | N |
| **Across(Mean,Dir)** | -113.61 | W |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | 4.59 | 14.71 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -0.38 | 0.49 |
| **Across(Mean,Stddev)** | 0.04 | 0.81 |

**Scan Range-937-1876; Pix Range-934-1869**

| | | |
|---|---|---|
| **Number of GCPs** | -999 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | -999.99 | NotAvail |
| **Across(Mean,Dir)** | -999.99 | NotAvail |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | -999.99 | -999.9 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -999.99 | -999.99 |
| **Across(Mean,Stddev)** | -999.99 | -999.99 |

**Scan Range-937-1876; Pix Range-1869-2805**

| | | |
|---|---|---|
| **Number of GCPs** | -999 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | -999.99 | NotAvail |
| **Across(Mean,Dir)** | -999.99 | NotAvail |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | -999.99 | -999.9 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -999.99 | -999.99 |
| **Across(Mean,Stddev)** | -999.99 | -999.99 |

**Scan Range-1876-2816; Pix Range-0-934**

| | | |
|---|---|---|
| **Number of GCPs** | -999 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | -999.99 | NotAvail |
| **Across(Mean,Dir)** | -999.99 | NotAvail |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | -999.99 | -999.9 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -999.99 | -999.99 |
| **Across(Mean,Stddev)** | -999.99 | -999.99 |

**Scan Range-1876-2816; Pix Range-937-1869**

| | | |
|---|---|---|
| **Number of GCPs** | -999 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | -999.99 | NotAvail |
| **Across(Mean,Dir)** | -999.99 | NotAvail |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | -999.99 | -999.9 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -999.99 | -999.99 |
| **Across(Mean,Stddev)** | -999.99 | -999.99 |

**Scan Range-1876-2816; Pix Range-1869-2805**

| | | |
|---|---|---|
| **Number of GCPs** | -999 | |
| **Location Error(Km)** | | |
| **Along(Mean,Dir)** | -999.99 | NotAvail |
| **Across(Mean,Dir)** | -999.99 | NotAvail |
| **Scale(Km)** | | |
| **Average Scale (Mean,%Variation)** | -999.99 | -999.9 |
| **Internal Distortion(Pixel)** | | |
| **Along(Mean,Stddev)** | -999.99 | -999.99 |
| **Across(Mean,Stddev)** | -999.99 | -999.99 |

*-999 : no gcp available

* -999.99 : values are not computed