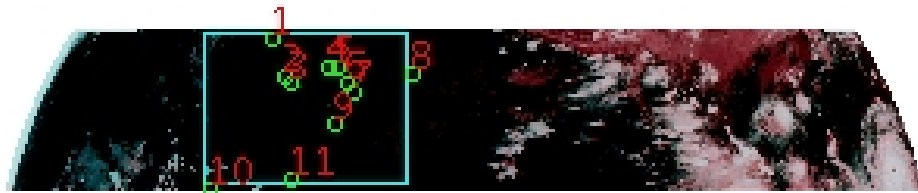


DQE Report: Location Accuracy of INSAT-3DR-IMG RAPID_SCAN Product 3RIMG_12SEP2018_1215

Satellite INSAT-3DR **No Of Bands** 6 **Product Type** RAPID_SCAN
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 12-09-18/24:15 **Station ID** BES **Field View(deg)** 18.006
Res(Y,X) [Km] (4.0,4.0) **Res(Y,X) [uRad]** (112.0,112.0)

(81.042N,-7.157W)

(81.042N,155.157E)



(-81.042S,-7.157W)

(-81.042S,155.157E)

GCP Distribution overview for 3RIMG12SEP20181215L1BSTD

Image Width: 2805 **Image Height:** 2816 **No Of GCPs:** 11

GCP Coverage(%) 15.35 **(N-S)** 20.98 **(E-W)**

Location Error(E)

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

Location Error (In IR Pixels)

| | Mean | Direction | Stddev | RMS |
|--------|--------|-----------|--------|-------|
| Along | 1.065 | N | 0.575 | 1.210 |
| Across | -2.497 | W | 1.015 | 2.695 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.526 | 0.367 | 13.159 |
| Along | 4.767 | 0.415 | 19.181 |
| Across | 4.617 | 0.153 | 15.414 |

Internal Distortion (in IR Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 1.764 | -0.826 | 0.55 | 0.991 |
| Across | 2.731 | 1.027 | 0.90 | 1.364 |

Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|----------|
| -0.01818 | -0.00618 | -0.01079 |

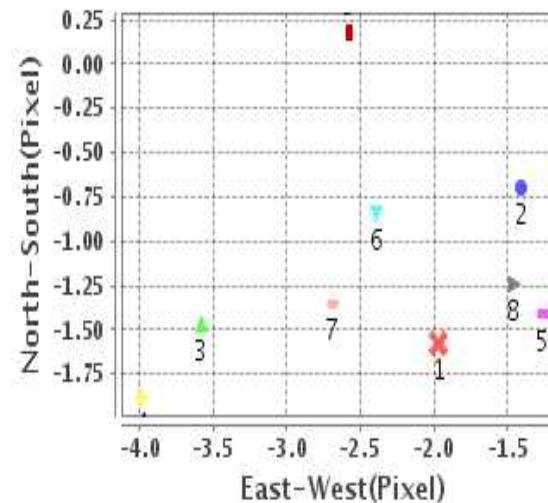
Reference Used

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

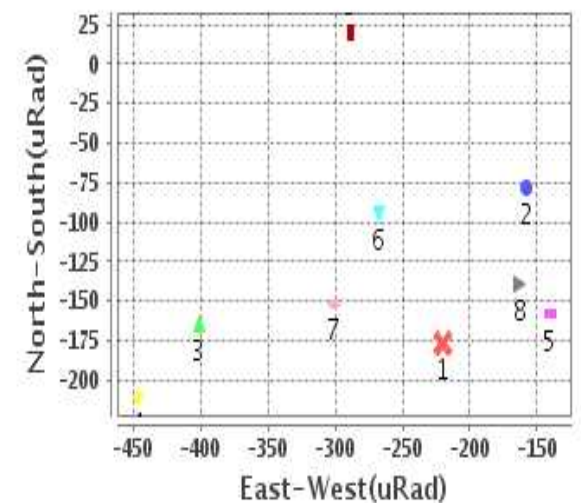
Radial Error (in IR Pixels)

| | |
|-------------|-------|
| Mean | 2.764 |
| Min | 1.523 |
| Max | 4.616 |
| CE90 | 4.440 |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|--------------------------|---------------|----------------------------------|------------|
| Satellite | INSAT-3DR | Generation Date | 12-09-18 |
| Sensor | IMG | DQE Date | 14-09-2018 |
| PassType | NONE | Aquisition Date | 12-09-18 |
| Imaging Mode | NORMAL_FRAM | Aquisition Time(GMT) | 24:15 |
| 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_12SEP20 | 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) | 0.0 |
| Center Lon(deg) | 74.0 |
| 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) | 81.042 |
| NW_Lon(deg) | -7.157 |
| SW_Lat(deg) | -81.042 |
| SW_Lon(deg) | -7.157 |
| NE_Lat(deg) | 81.042 |
| NE_Lon(deg) | 155.157 |
| SE_Lat(deg) | -81.042 |
| SE_Lon(deg) | 155.157 |

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 | SemiMajorAxis(m) | 6378137.00 | Mode Of Computation | grid |
| Ellipsoid | WGS_84 | Unit | -sigma | SemiMinorAxis(m) | 6356752.31 | Used Reference Type | REFINSREF |
| Datum | WGS_84 | | pixels | Standardparallel1(deg) | 17.0 | | |
| Zone | Not Applicable | | | Standardparallel2(deg) | 17.0 | | |

* -999.99 : Not Applicable/Not Available

References

JobId : 3RIMG12SEP20181215L1BSTD

(-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

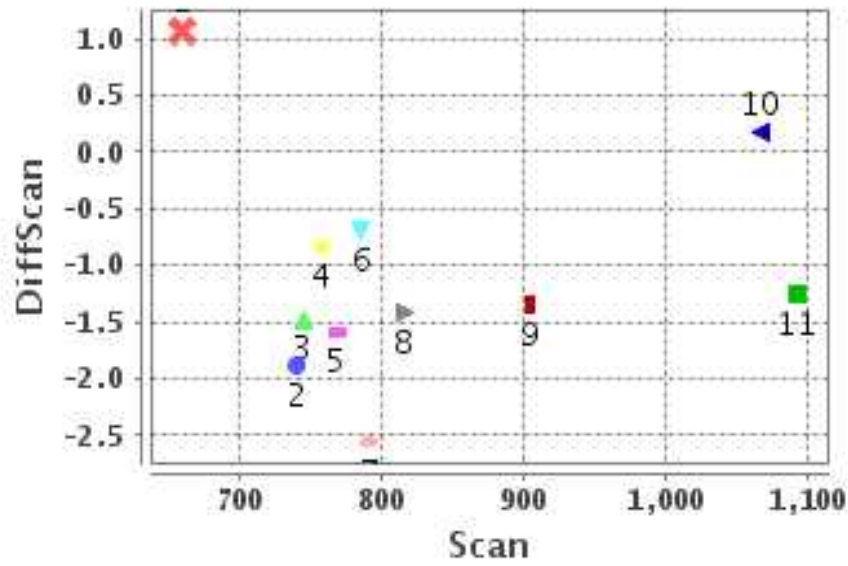
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 11

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|-------|--------|-------|---------|----------------|
| GCP Scan | 829.4 | 130.3 | 659.0 | 1091.25 | 15.35 (N-S) |
| GCP Pix | 937.7 | 145.8 | 633.0 | 1221.50 | 20.98 (E-W) |

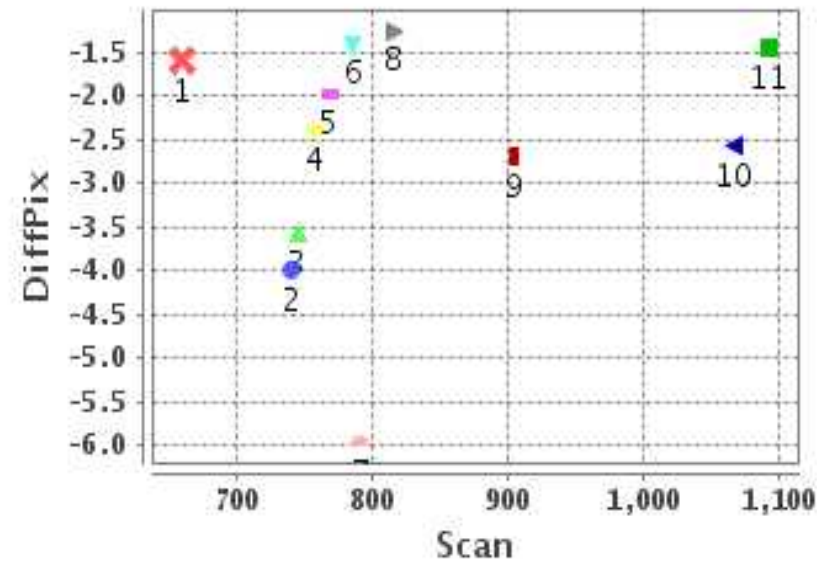
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 659.0 | 817.2 | 1.1 | -1.59 | 5.874 | S | 5.426 | W | Rejected |
| 2 | 768.5 | 851.2 | -1.6 | -1.97 | 6.206 | N | 9.232 | W | Accepted |
| 3 | 785.0 | 868.5 | -0.7 | -1.41 | 3.991 | N | 5.088 | W | Accepted |
| 4 | 744.5 | 980.0 | -1.5 | -3.58 | 5.325 | N | 17.678 | W | Accepted |
| 5 | 740.2 | 1003.8 | -1.9 | -3.99 | 8.028 | N | 15.842 | W | Accepted |
| 6 | 791.2 | 1027.2 | -2.6 | -5.96 | 11.534 | N | 27.146 | W | Rejected |
| 7 | 815.8 | 1048.2 | -1.4 | -1.26 | 3.224 | N | 5.171 | W | Accepted |
| 8 | 757.2 | 1221.5 | -0.8 | -2.39 | 3.100 | N | 8.374 | W | Accepted |
| 9 | 904.2 | 991.2 | -1.4 | -2.69 | 4.948 | N | 10.975 | W | Accepted |
| 10 | 1091.2 | 633.0 | -1.2 | -1.45 | 4.296 | N | 8.275 | W | Accepted |
| 11 | 1066.0 | 872.2 | 0.2 | -2.57 | 0.795 | S | 9.264 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



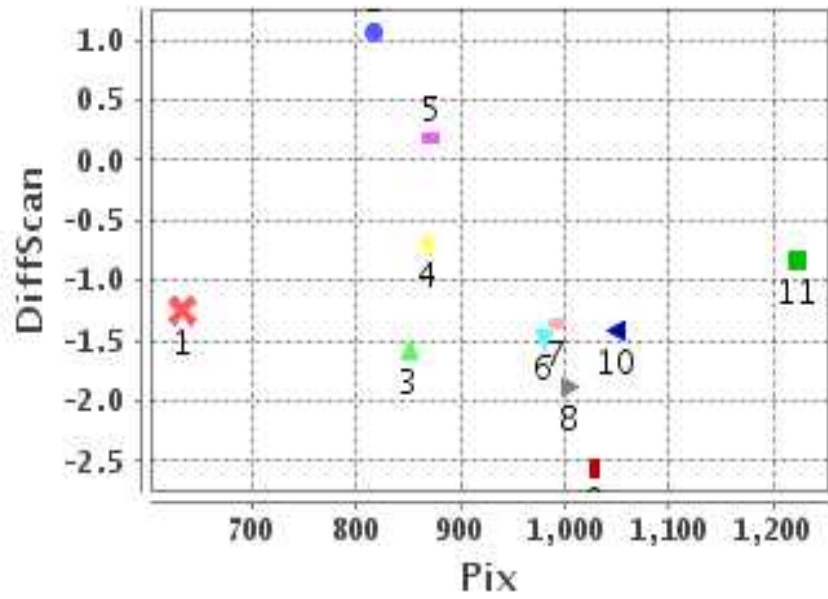
Number Of Points

| | |
|-------|---|
| North | 8 |
| South | 1 |
| East | 0 |
| West | 9 |

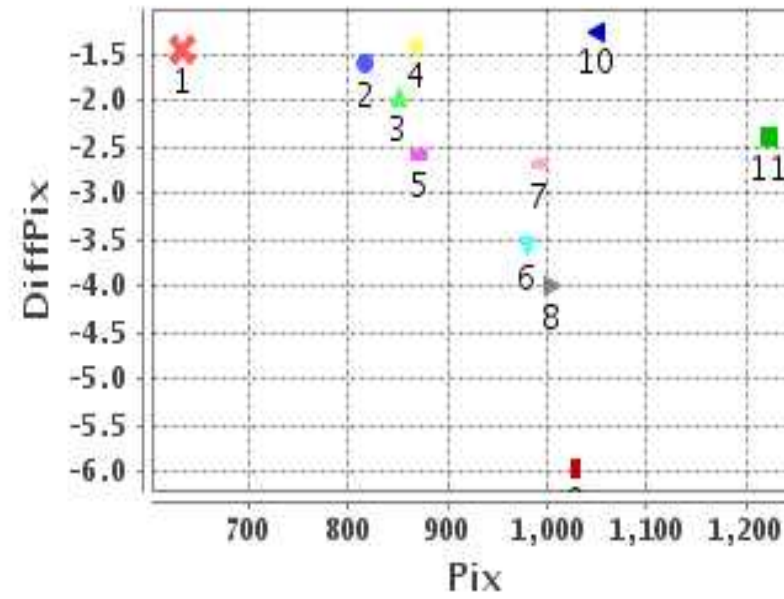
Radial Error (Km)

| | |
|------|-------|
| Mean | 2.764 |
| Min | 1.523 |
| Max | 4.616 |
| CE90 | 4.440 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|--------|--------|-------|-----|----------|----------|
| Along(Km) | 1.065 | 0.575 | 1.210 | N | 1.069 | 1.281 |
| Across (Km) | -2.497 | 1.015 | 2.695 | W | 2.394 | 2.823 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| | | |
|--|-------|-------|
| Scan Range-0-937; Pix Range-0-934 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 5.095 | N |
| Across(Mean,Dir) | -7.16 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 5.75 | 43.80 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -0.88 | 0.00 |
| Across(Mean,Stddev) | -0.56 | 0.00 |

| | | |
|---|--------|-------|
| Scan Range-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 5 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 4.928 | N |
| Across(Mean,Dir) | -11.61 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.63 | 15.86 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -0.61 | 0.25 |
| Across(Mean,Stddev) | -1.00 | 0.97 |

| | | |
|--|---------|----------|
| 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 | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 1.75 | N |
| Across(Mean,Dir) | -8.76 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.56 | 14.05 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | 1.42 | 0.00 |
| Across(Mean,Stddev) | 1.12 | 0.00 |

| | | |
|--|---------|----------|
| 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