

# DQE Report: Location Accuracy of INSAT-3DR-IMG RAPID\_SCAN Product 3RIMG\_26FEB2019\_0615

**Satellite** INSAT-3DR      **No Of Bands** 6      **Product Type** RAPID\_SCAN  
**Sensor** IMG      **LvlOfProcess** L1B      **Selected Band** 2-TIR1  
**DOP/Time** 26-02-19/06:15      **Station ID** BES      **Field View(deg)** 18.006  
**Res(Y,X) [Km]** (4.0,4.0)      **Res(Y,X) [uRad]** (112.0,112.0)

(81.042N,-7.157W)

(81.042N,155.157E)



(-81.042S,-7.157W)

(-81.042S,155.157E)

GCP Distribution overview for 3RIMG26FEB20190615L1BSTD

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

**GCP Coverage(%)** 11.33      **(N-S)** 39.39      **(E-W)**

## Location Error(E)

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

## Location Error (In IR Pixels)

	Mean	Direction	Stddev	RMS
Along	1.787	N	0.737	1.933
Across	-2.738	W	1.354	3.054

## Scale (Km)

	Pixel Size	Stddev	%variation
Average	4.545	0.425	13.627
Along	6.533	8.186	63.320
Across	4.782	1.414	19.556

## Internal Distortion (in IR Pixels)

	PeakToPeak	Mean	Stddev	RMS
Along	1.576	-0.348	0.56	0.662
Across	3.950	0.953	1.28	1.598

## Attitude Residuals (Deg)

Pitch	Roll	Yaw
-0.01859	-0.01008	-0.06261

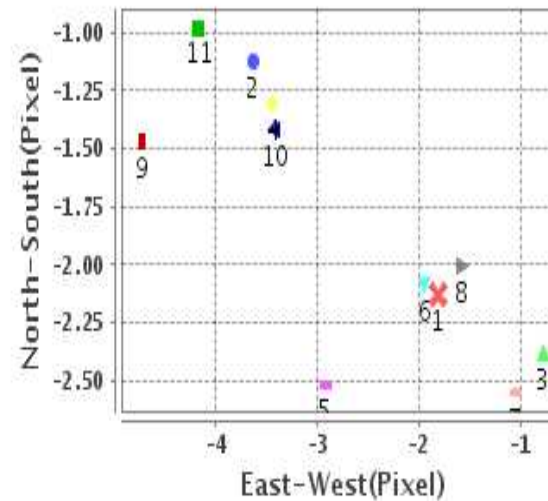
## Reference Used

Sensor	Resolution	Projection
ETM	500.00	GGP

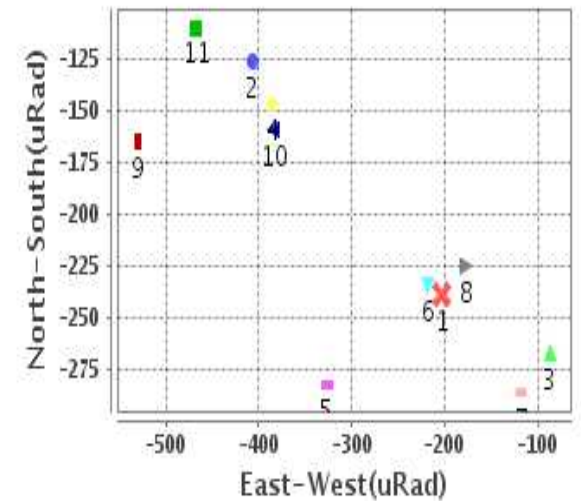
## Radial Error (in IR Pixels)

<b>Mean</b>	3.536
<b>Min</b>	2.409
<b>Max</b>	4.658
<b>CE90</b>	4.111

## Location Error For GCPs(Pixel)



## Location Error For GCPs(uRad)



## Detailed Product Information

### Ancillary Info

<b>Satellite</b>	INSAT-3DR	<b>Generation Date</b>	26-02-19
<b>Sensor</b>	IMG	<b>DQE Date</b>	27-02-2019
<b>PassType</b>	NONE	<b>Aquisition Date</b>	26-02-19
<b>Imaging Mode</b>	NORMAL_FRAM	<b>Aquisition Time(GMT)</b>	06:15
<b>Sat Altitude(m)</b>	3.6E7	<b>Nominal Altitude(Km)</b>	3.6E7
<b>Station</b>	BES	<b>Predicted Altitude(Km)</b>	-999.99
<b>Sat Location(deg)</b>	-999.99 E	<b>Nominal Center Lat(deg)</b>	0.0
<b>Format</b>	hdf5-1.8.8	<b>Nominal Center Lon(deg)</b>	74.0
<b>LvlOfProcessing</b>	RAPID_SCAN	<b>Predicted Center Lat(deg)</b>	-999.99
<b>DP JobId</b>	3RIMG_26FEB20	<b>Predicted Center Lon(deg)</b>	-999.99
<b>ProductCode</b>	NONE		
<b>Field View(deg)</b>	18.006		

### Projection Parameters

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

### Scene Center Desc

<b>Centre Lat(deg)</b>	0.0
<b>Center Lon(deg)</b>	74.0
<b>Centre Roll(deg)</b>	-999.0
<b>Centre Pitch(deg)</b>	-999.0
<b>Center Yaw(deg)</b>	-999.0
<b>SunElevation(deg)</b>	-999.99
<b>SunAzimuth(deg)</b>	-999.99
<b>SatElevation(deg)</b>	-999.99
<b>SatAzimuth(deg)</b>	-999.99

### Scene Corner Desc

<b>NW_Lat(deg)</b>	81.042
<b>NW_Lon(deg)</b>	-7.157
<b>SW_Lat(deg)</b>	-81.042
<b>SW_Lon(deg)</b>	-7.157
<b>NE_Lat(deg)</b>	81.042
<b>NE_Lon(deg)</b>	155.157
<b>SE_Lat(deg)</b>	-81.042
<b>SE_Lon(deg)</b>	155.157

### Band Wise Details

	Res_AL(Km)	Res_AX(Km)	Image Height	Image Width
<b>MIR</b>	4.0	4.0	2816	2805
<b>SWIR</b>	1.0	1.0	11264	11220
<b>TIR1</b>	4.0	4.0	2816	2805
<b>TIR2</b>	4.0	4.0	2816	2805
<b>VIS</b>	1.0	1.0	11264	11220
<b>WV</b>	8.0	8.0	1408	1402

## GDQE Computation Base

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

\* -999.99 : Not Applicable/Not Available

## References

**JobId : 3RIMG26FEB20190615L1BSTD**

(-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

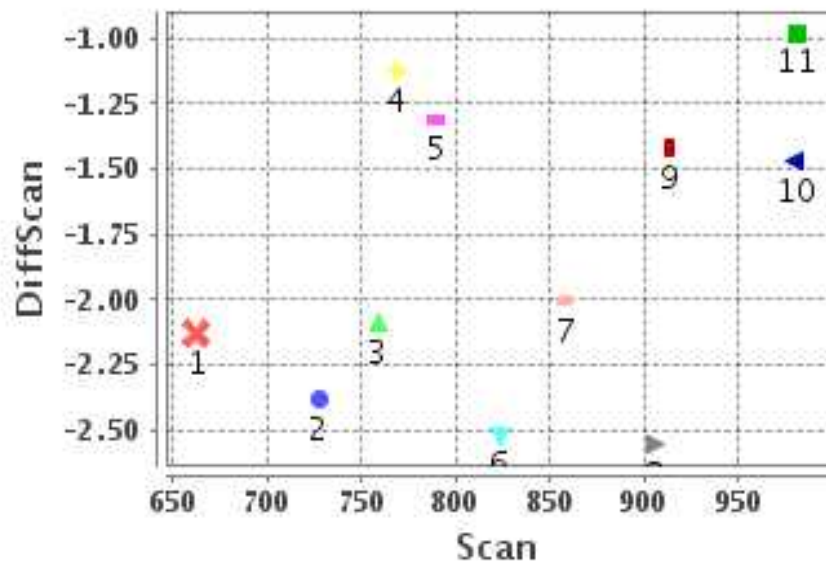
Image Width (pixels) : 2805      Image Height (pixels) : 2816      No of GCPs : 11

	Mean	StdDev	Min	Max	Coverage(in %)
<b>GCP Scan</b>	833.5	99.1	662.2	981.25	11.33 (N-S)
<b>GCP Pix</b>	1242.3	377.9	817.5	1922.50	39.39 (E-W)

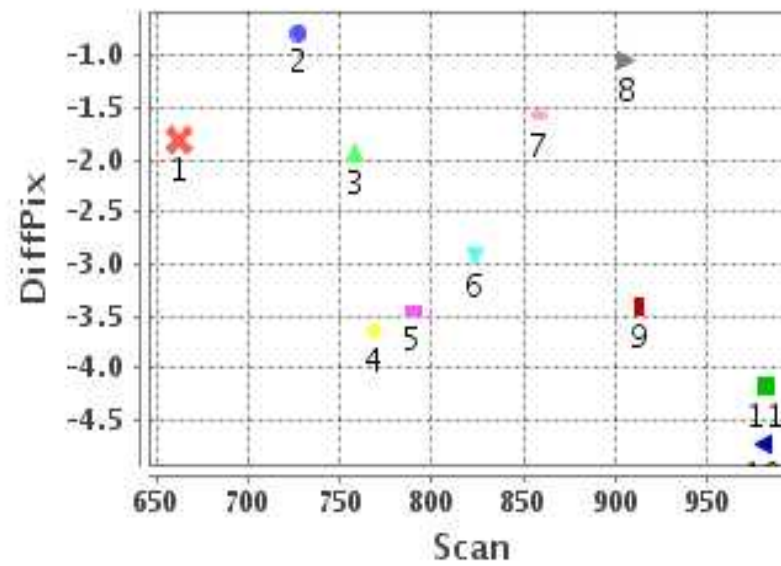
### Identified Control Point details : ( Differences are Reference - Product )

No	Scan	Pix	DiffScan (line)	DiffPix (pixel)	DifLat (Km)	Dir	DifLon (Km)	Dir	Status
1	662.2	817.5	-2.1	-1.81	10.921	N	9.464	W	Accepted
2	768.2	852.2	-1.1	-3.63	5.234	N	17.883	W	Accepted
3	727.5	981.2	-2.4	-0.78	10.189	N	3.881	W	Accepted
4	789.8	1024.0	-1.3	-3.44	3.738	N	16.008	W	Accepted
5	823.5	1049.5	-2.5	-2.92	10.220	N	11.916	W	Accepted
6	758.5	1221.0	-2.1	-1.94	7.766	N	8.596	W	Accepted
7	905.5	989.5	-2.6	-1.05	9.191	N	2.899	W	Accepted
8	858.0	1321.8	-2.0	-1.58	9.631	N	3.519	W	Accepted
9	980.2	1583.5	-1.5	-4.73	4.436	N	17.098	W	Accepted
10	913.2	1902.5	-1.4	-3.42	5.218	N	12.879	W	Accepted
11	981.2	1922.5	-1.0	-4.17	2.100	N	16.308	W	Accepted

### Error(Pixels) Vs. GCPScan



### Error(Pixels) Vs. GCPScan



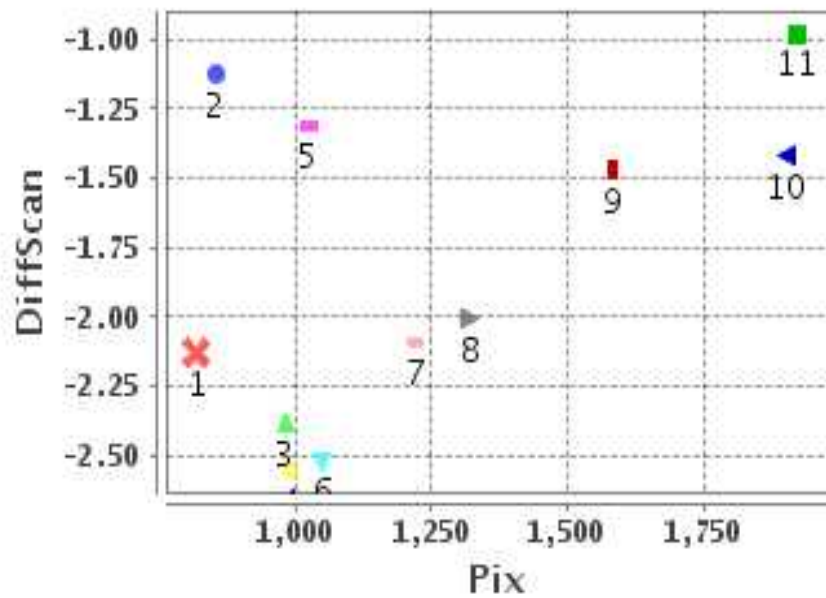
#### Number Of Points

North	11
South	0
East	0
West	11

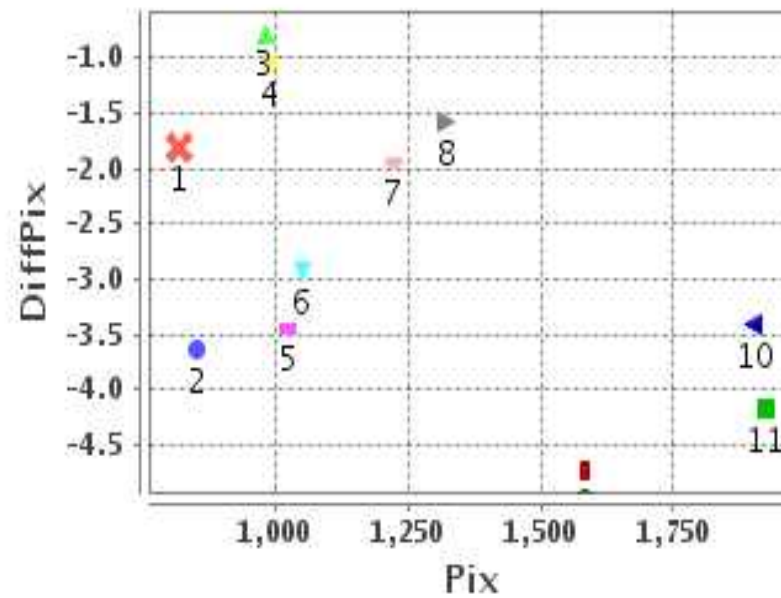
#### Radial Error ( Km )

Mean	3.536
Min	2.409
Max	4.658
CE90	4.111

### Error(Pixels) Vs. GCPPix



### Error(Pixels) Vs. GCPPix



#### Location Accuracy

	Mean	StdDev	RMS	Dir	* MinRMS	* MaxRMS
Along( Km )	1.787	0.737	1.933	N	1.835	2.021
Across ( Km )	-2.738	1.354	3.054	W	2.874	3.195

## Block-Wise Geo location Error Statistics

### Location Accuracy,Scale,ID

<b>Scan Range-0-937; Pix Range-0-934</b>		
Number of GCPs	2	
<b>Location Error(Km)</b>		
Along(Mean,Dir)	8.075	N
Across(Mean,Dir)	-13.67	W
<b>Scale(Km)</b>		
Average Scale (Mean,%Variation)	5.83	45.86
<b>Internal Distortion(Pixel)</b>		
Along(Mean,Stddev)	-1.01	0.00
Across(Mean,Stddev)	1.82	0.00

<b>Scan Range-0-937; Pix Range-934-1869</b>		
Number of GCPs	6	
<b>Location Error(Km)</b>		
Along(Mean,Dir)	8.455	N
Across(Mean,Dir)	-7.80	W
<b>Scale(Km)</b>		
Average Scale (Mean,%Variation)	4.55	13.85
<b>Internal Distortion(Pixel)</b>		
Along(Mean,Stddev)	-0.29	0.45
Across(Mean,Stddev)	1.41	0.88

<b>Scan Range-0-937; Pix Range-1869-2805</b>		
Number of GCPs	1	
<b>Location Error(Km)</b>		
Along(Mean,Dir)	5.22	N
Across(Mean,Dir)	-12.87	W
<b>Scale(Km)</b>		
Average Scale (Mean,%Variation)	-999.99	-999.9
<b>Internal Distortion(Pixel)</b>		
Along(Mean,Stddev)	-999.99	-999.99
Across(Mean,Stddev)	-999.99	-999.99

<b>Scan Range-937-1876; Pix Range-0-934</b>		
Number of GCPs	-999	
<b>Location Error(Km)</b>		
Along(Mean,Dir)	-999.99	NotAvail
Across(Mean,Dir)	-999.99	NotAvail
<b>Scale(Km)</b>		
Average Scale (Mean,%Variation)	-999.99	-999.9
<b>Internal Distortion(Pixel)</b>		
Along(Mean,Stddev)	-999.99	-999.99
Across(Mean,Stddev)	-999.99	-999.99

<b>Scan Range-937-1876; Pix Range-934-1869</b>		
Number of GCPs	1	
<b>Location Error(Km)</b>		
Along(Mean,Dir)	4.44	N
Across(Mean,Dir)	-17.10	W
<b>Scale(Km)</b>		
Average Scale (Mean,%Variation)	-999.99	-999.9
<b>Internal Distortion(Pixel)</b>		
Along(Mean,Stddev)	-999.99	-999.99
Across(Mean,Stddev)	-999.99	-999.99

<b>Scan Range-937-1876; Pix Range-1869-2805</b>		
Number of GCPs	1	
<b>Location Error(Km)</b>		
Along(Mean,Dir)	2.1	N
Across(Mean,Dir)	-16.31	W
<b>Scale(Km)</b>		
Average Scale (Mean,%Variation)	-999.99	-999.9
<b>Internal Distortion(Pixel)</b>		
Along(Mean,Stddev)	-999.99	-999.99
Across(Mean,Stddev)	-999.99	-999.99

<b>Scan Range-1876-2816; Pix Range-0-934</b>		
Number of GCPs	-999	
<b>Location Error(Km)</b>		
Along(Mean,Dir)	-999.99	NotAvail
Across(Mean,Dir)	-999.99	NotAvail
<b>Scale(Km)</b>		
Average Scale (Mean,%Variation)	-999.99	-999.9
<b>Internal Distortion(Pixel)</b>		
Along(Mean,Stddev)	-999.99	-999.99
Across(Mean,Stddev)	-999.99	-999.99

<b>Scan Range-1876-2816; Pix Range-937-1869</b>		
Number of GCPs	-999	
<b>Location Error(Km)</b>		
Along(Mean,Dir)	-999.99	NotAvail
Across(Mean,Dir)	-999.99	NotAvail
<b>Scale(Km)</b>		
Average Scale (Mean,%Variation)	-999.99	-999.9
<b>Internal Distortion(Pixel)</b>		
Along(Mean,Stddev)	-999.99	-999.99
Across(Mean,Stddev)	-999.99	-999.99

<b>Scan Range-1876-2816; Pix Range-1869-2805</b>		
Number of GCPs	-999	
<b>Location Error(Km)</b>		
Along(Mean,Dir)	-999.99	NotAvail
Across(Mean,Dir)	-999.99	NotAvail
<b>Scale(Km)</b>		
Average Scale (Mean,%Variation)	-999.99	-999.9
<b>Internal Distortion(Pixel)</b>		
Along(Mean,Stddev)	-999.99	-999.99
Across(Mean,Stddev)	-999.99	-999.99

\*-999 : no gcp available

\* -999.99 : values are not computed