

50TH ANNUAL ASPNG CONGRESS

27th – 29th July, 2016

Gateway Hotel, Port Moresby

SIGNIFICANCE OF TIDE GAUGES TO HYDROGRAPHY & SEA LEVEL MONITORING IN PNG.

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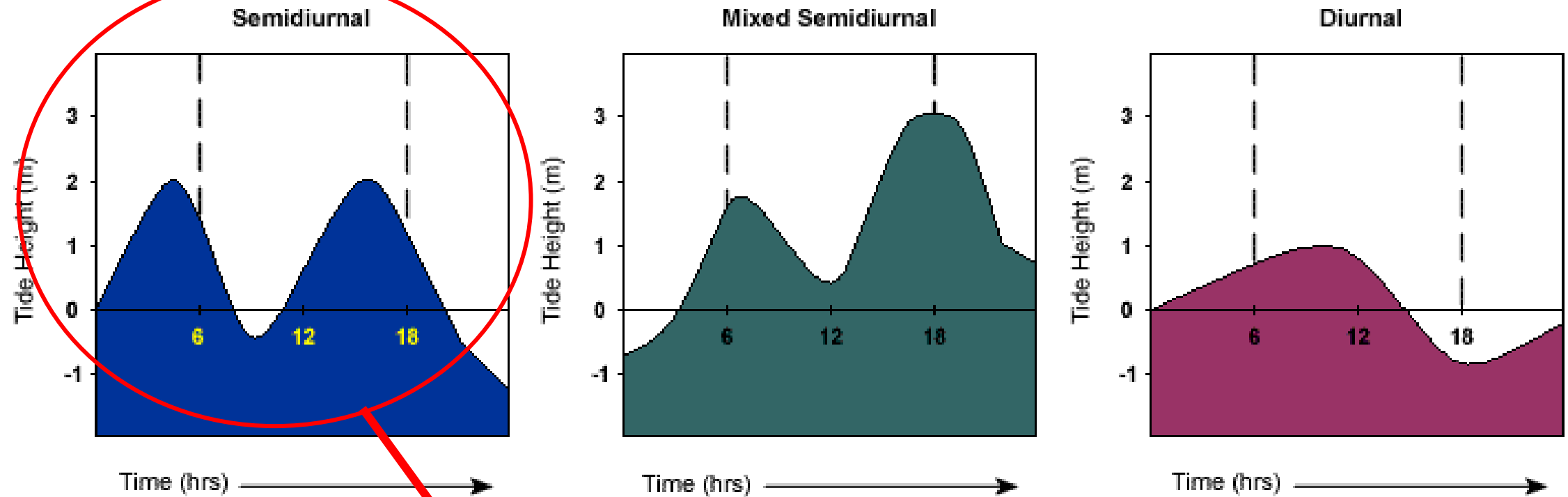
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Presentation Outline

1. PNG Tidal Characteristics & Types of TG's on the market today
2. NMSA RTG PNG Network integrated system operation, interactive Graphical display & accuracy of resolvable of tidal datasets.
3. RTG use in sea level monitoring in the context of Global warming
4. RTG's require stable BENCH MARKS

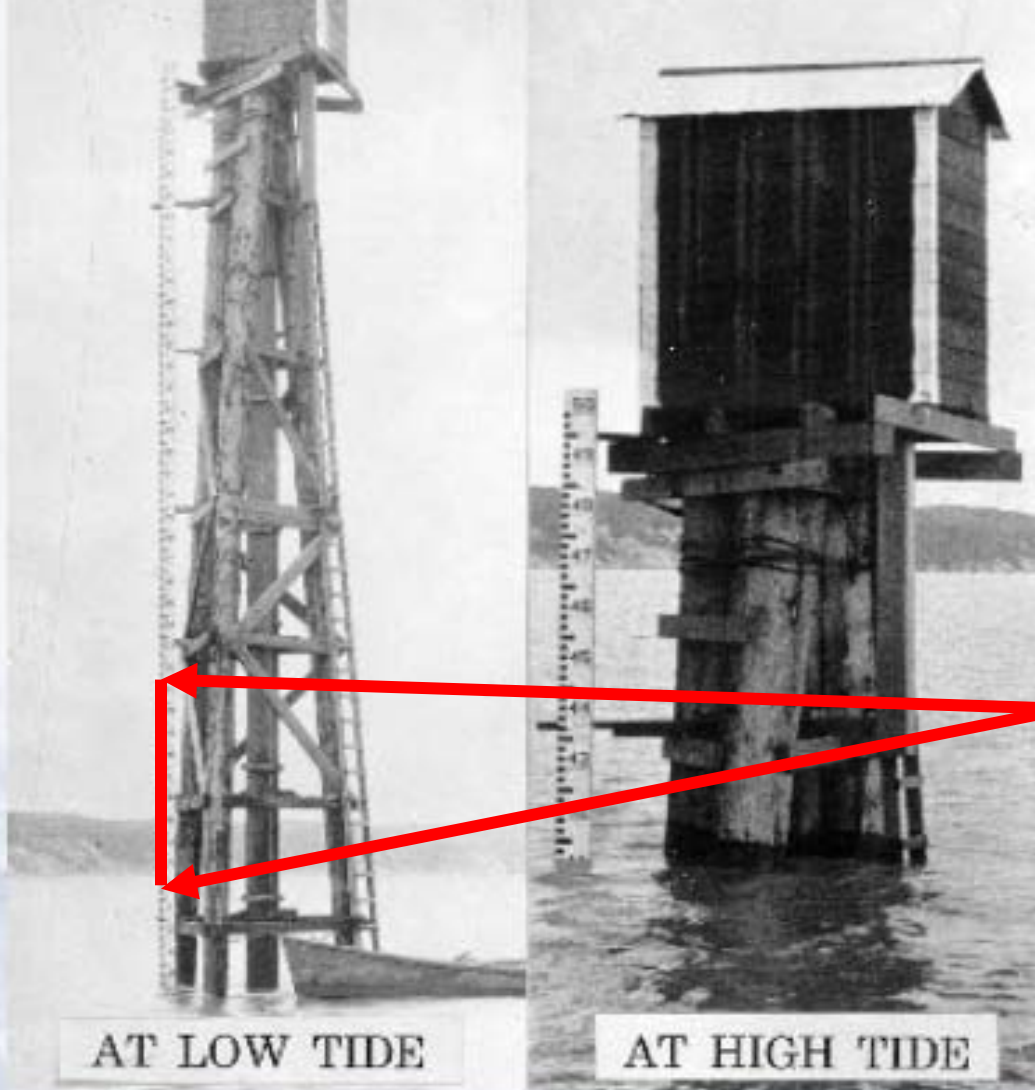
Conclude with QUESTIONS?.....

1. PNG tidal characteristics



Eg; Pom, kimbe, Alotau, Lae
exhibit semi-diurnal

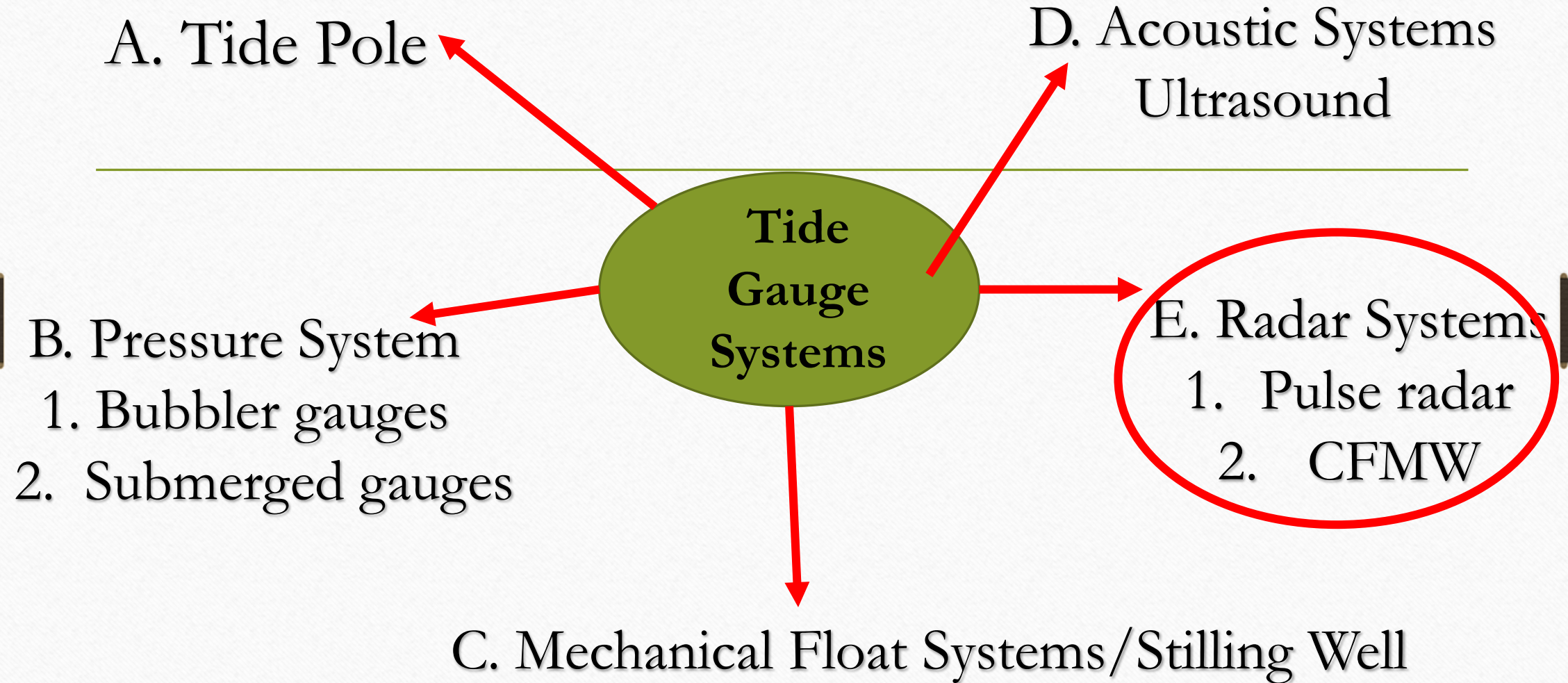
USA-East Coast



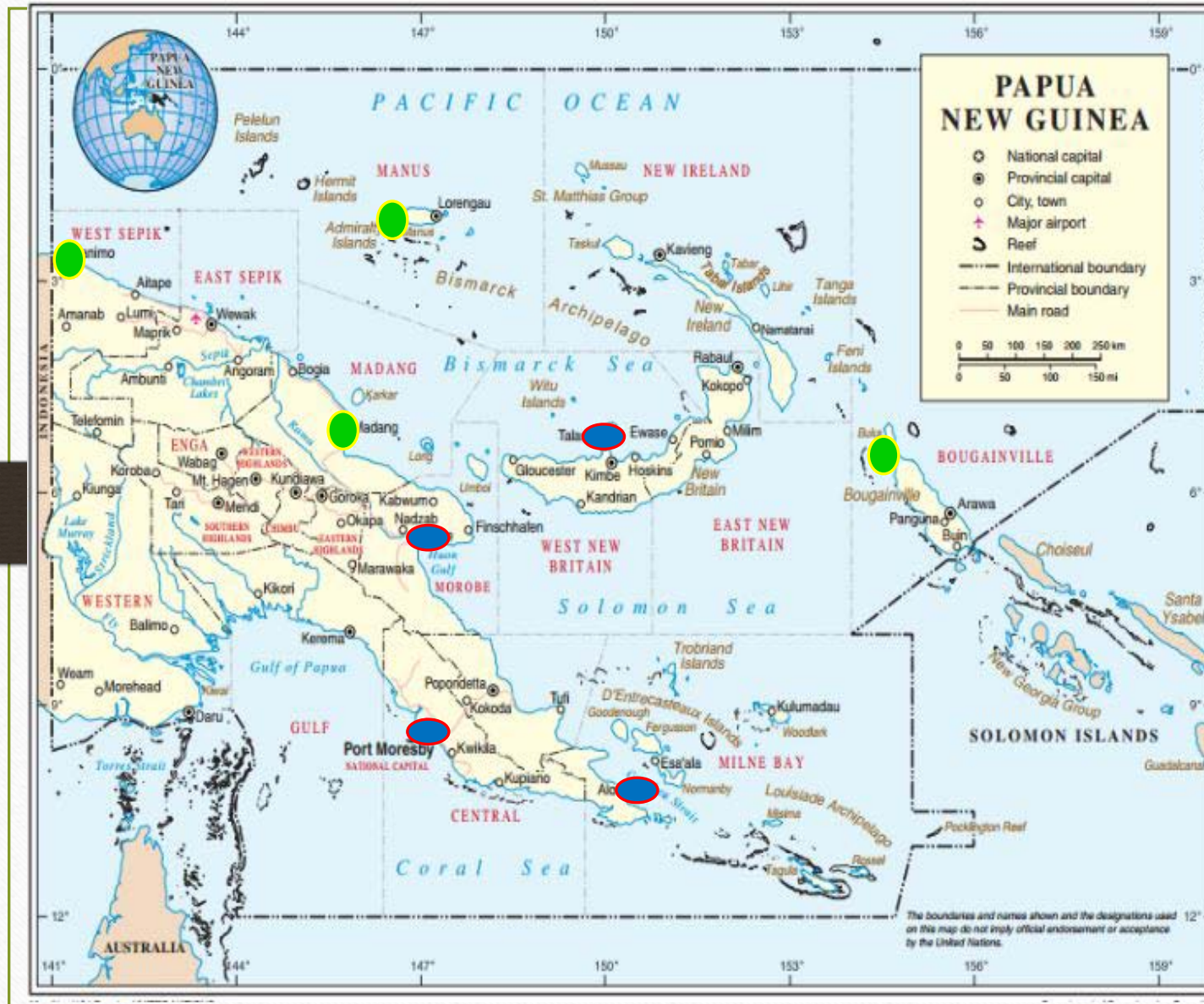
PNG

“On a global level
not very tidal intensive”
.7-1m tidal fluctuations

Types of tide gauges on the Market Today



2. NMSA PNG RTG Network

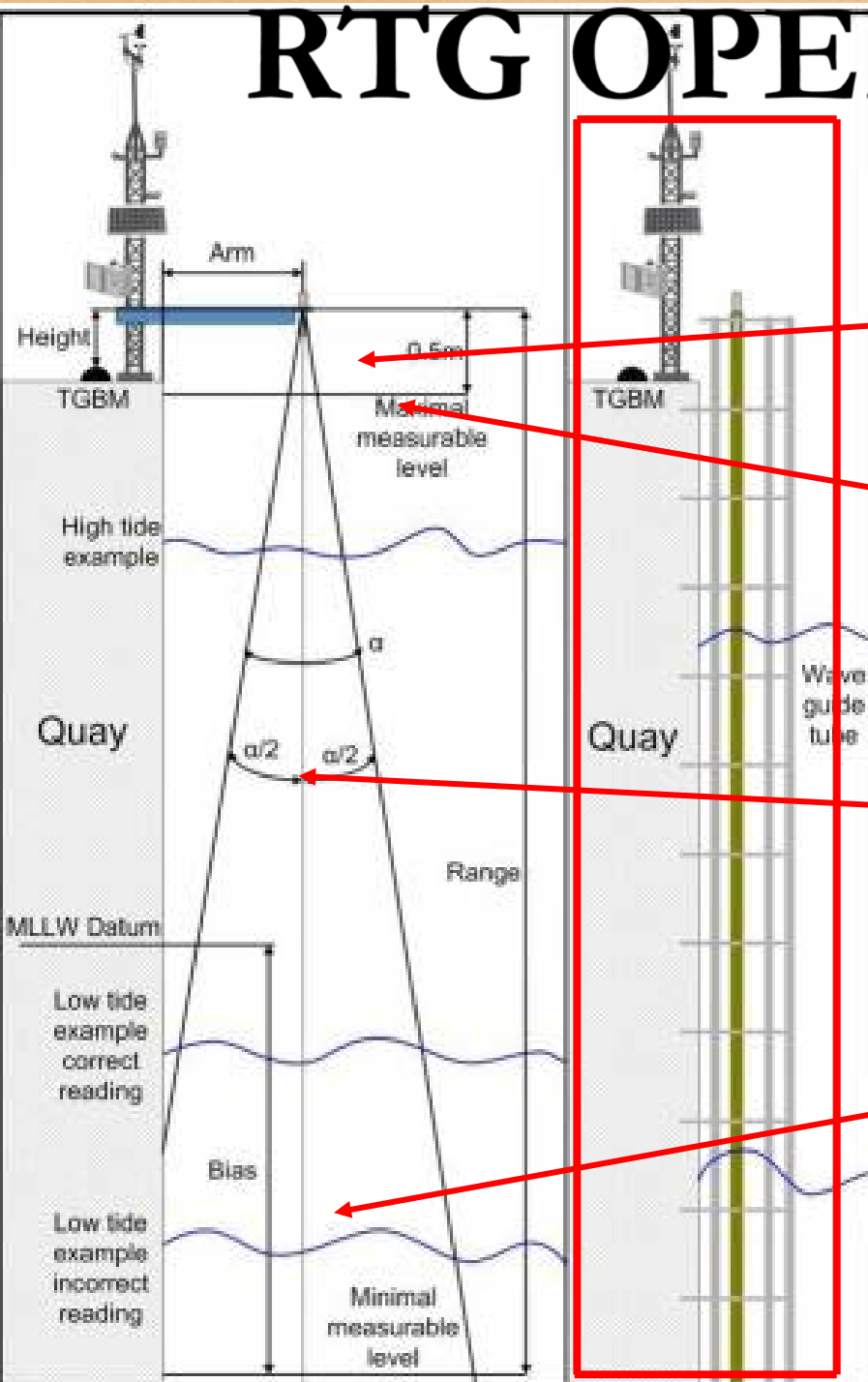


DATAMAR 3000C 26 GHZ



- ✓ POM Port
- ✓ Vanimo Port
- ✓ Lae Port
- ✓ Madang Port
- ✓ Kimbe Port
- ✓ Manus Port
- ✓ Alotau Port
- ✓ Buka Port

RTG OPERATION



1. Environmental conditions
(signal not attenuated)

2. Surface conditions

3. Spread Angle

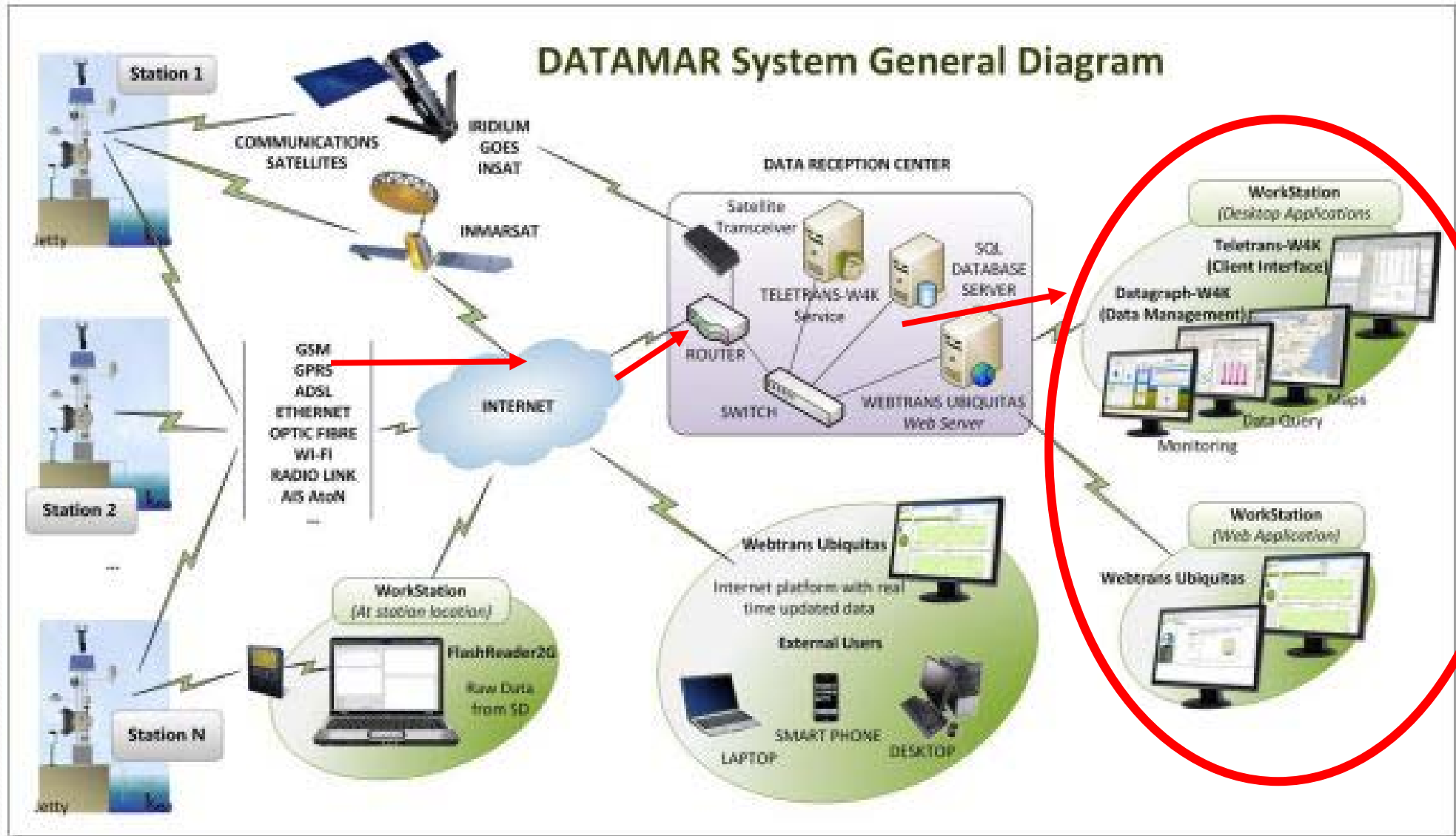
4. Measurable depth of water

A. BENCH MARK

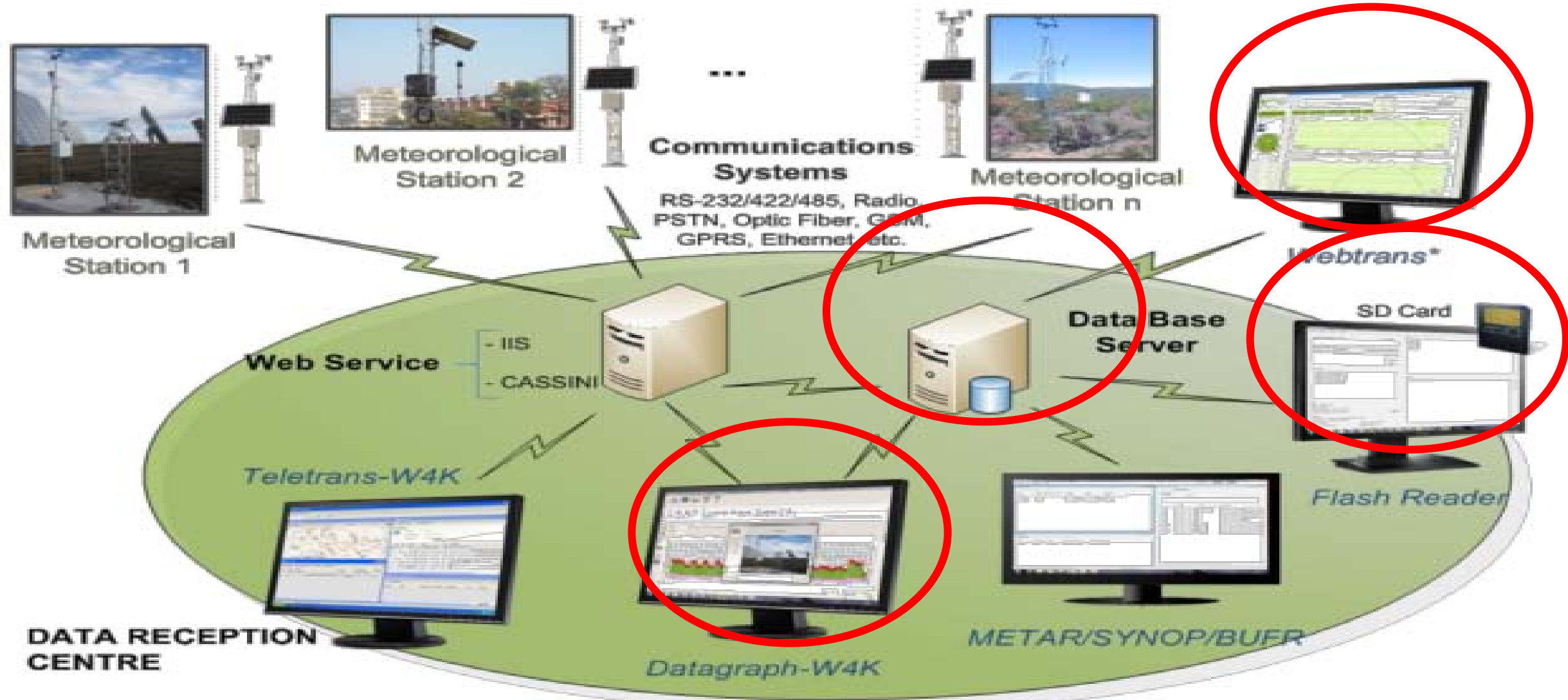
CHECK:

Station	BS	HI	FS	ELEV	REMARKS
BM 2	1.552	5.892		4.340	LAT
TGBM			2.078	3.814	
RETURN RUN (CHECK)					
TGBM	2.098	5.912		3.814	
			1.569	4.343	
Check = initial - final					
=					
4.343 - 4.340					
=					
0.003m					
Therefore, the TGBM level =					
3.814m					

Communication & data transmission



Graphical Display Applications



*NOTE: The application Webtrans allows the access to meteorological data in real time via web. This application is not included in GeonicaSuite Package, it will be provided independently.

FIGURE 1. SYSTEM ARCHITECTURE.¹



3000CM



FIGURE 37. SD MODULE.

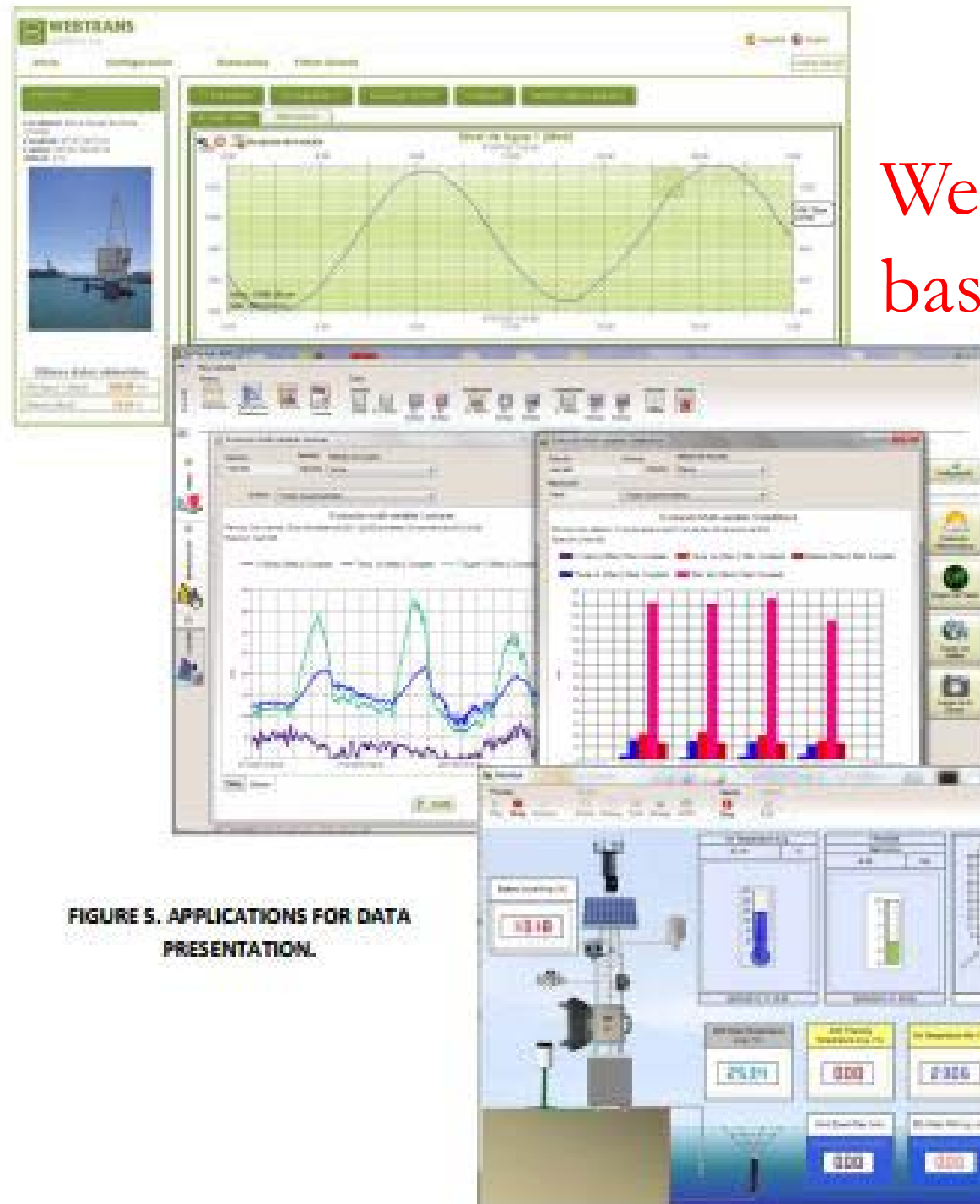
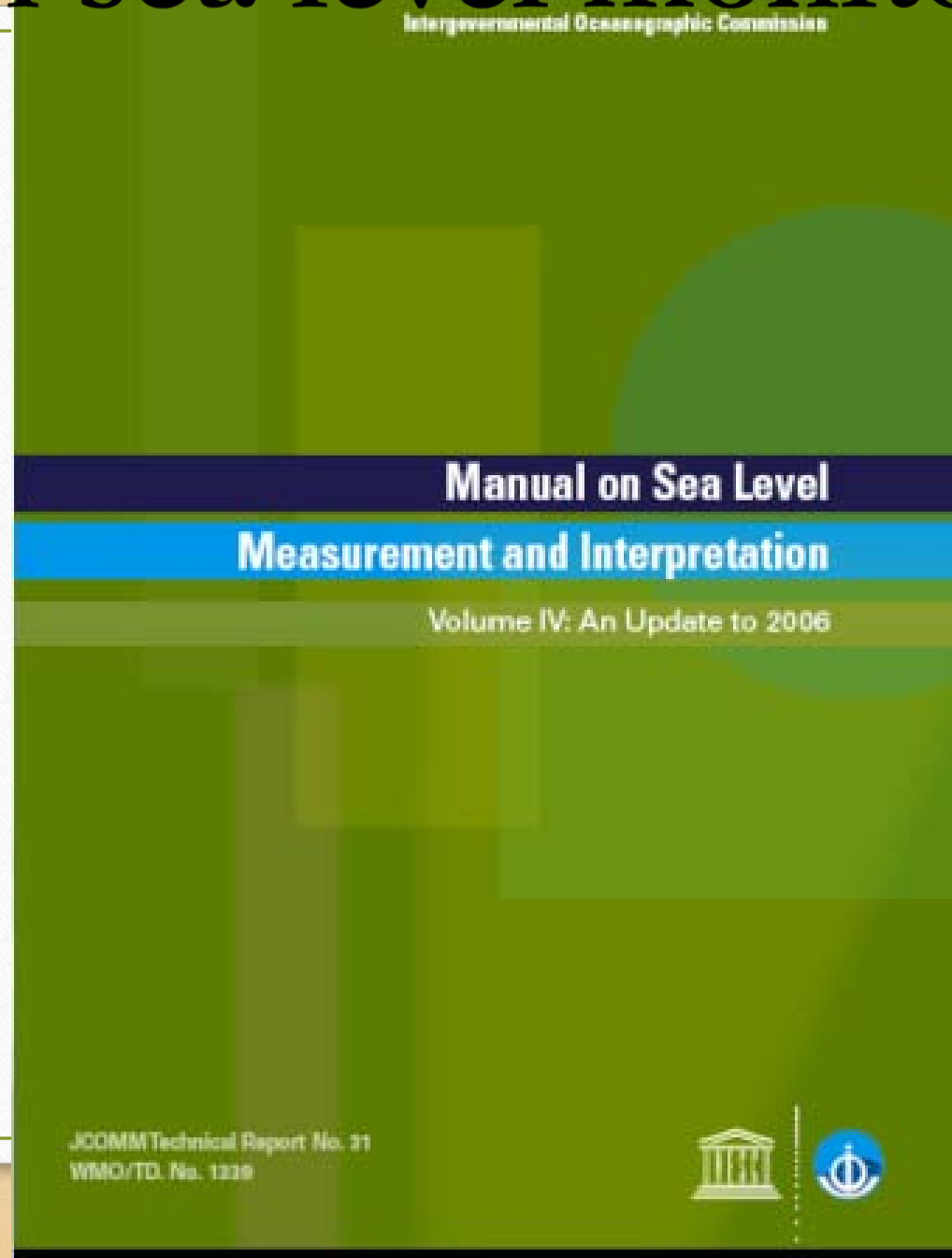


FIGURE 5. APPLICATIONS FOR DATA PRESENTATION.

Webtrans, online web based app

Datagraph

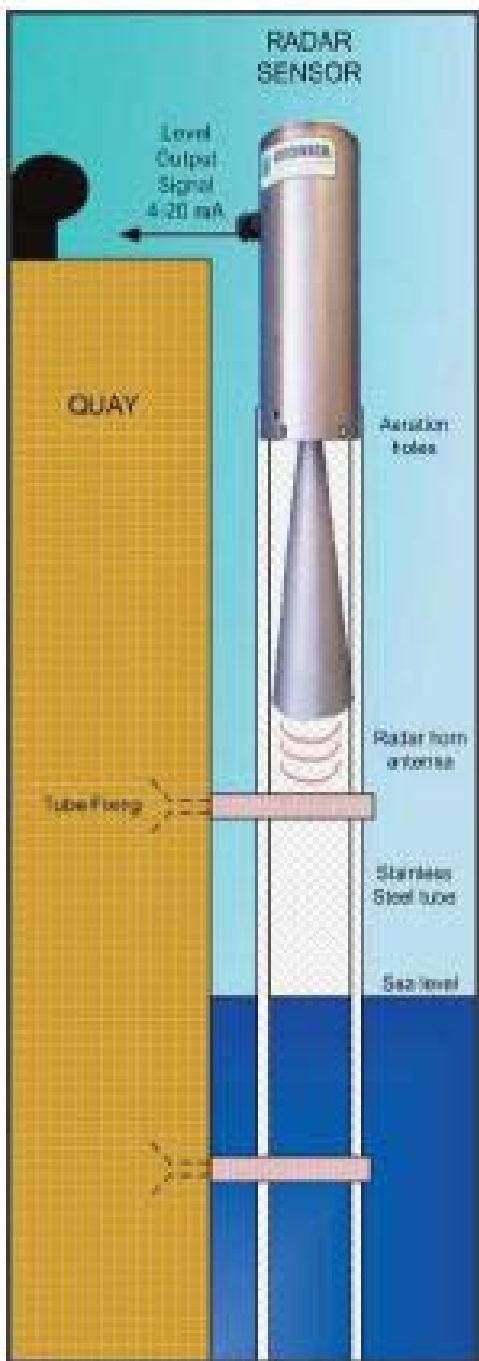
3. RTG use in sea level monitoring



PARTICIPATING GLOSS COUNTRIES



4. RTG importance to sea level monitoring and updating of MSL in the context of global warming.



Tidal data of accuracy of less than $<10\text{mm}$

GLOSS NETWORK



5. TG's are useless without Bench Marks

**Whatever the tide gauge used the Need for
datum control**

**NMSA has resolved to using 5 stable bench
marks, with one as the main BM for datum
control.**

THE END.....

Questions???

NMSA IFB FOR HYDROGRAPHIC SURVEY