

# DASTAG

PASSIVE ANTENNA MONITORING

THE RNS DAS MONITORING SYSTEM MONITORS EACH ANTENNA IN A DAS (DISTRIBUTED ANTENNA SYSTEM) AND WILL NOTIFY THE USER OF ANY SIGNAL DROPS OR DEGRADATION. THE NOTIFICATION WILL INCLUDE A DETAILED DESCRIPTION CORRESPONDING TO THE SITE LAYOUT DOCUMENT (SCHEMATIC DIAGRAM). FOR EXAMPLE "DAS MONITOR ALERT: BUILDING X, LOCATION X - SECTOR1 - 1ST FLOOR - ANT22".

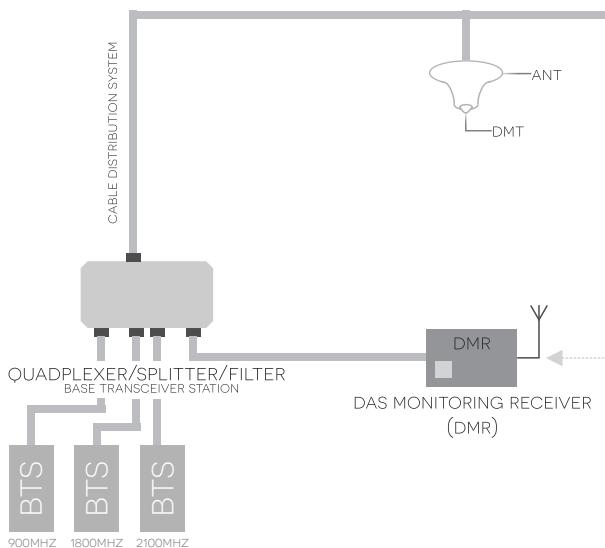
THE DAS MONITORING SYSTEM CONSISTS OF THE FOLLOWING KEY ELEMENTS:

1. DAS MONITORING TAG (DMT)
2. DAS MONITORING RECEIVER (DMR)
3. DAS CONTROL SERVER (DCS)
4. QUADPLEXER



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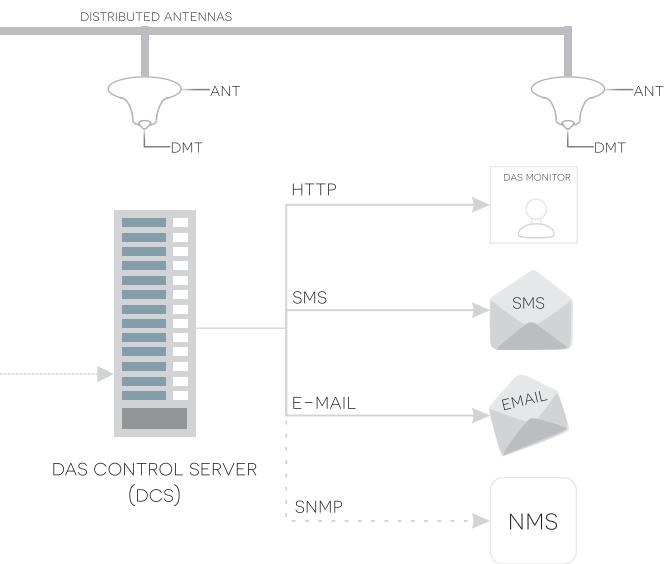
## DAS MONITORING ARCHITECTURE



## 1. DAS MONITORING TAG (DMT)

THE DAS MONITORING TAG (DMT) COMPRISSES AN 868MHZ RADIO TRANSMITTER. IT TRANSMITS ITS UNIQUE ID AT PREDEFINED INTERVALS AND HAS AN ON-BOARD NON-RECHARGEABLE BATTERY WITH A MINIMUM PROJECTED LIFE OF 5 YEARS. THE DMT REQUIRES NO MAINTENANCE DURING ITS OPERATIONAL LIFE.

THE RF OUTPUT POWER OF THE DMT IS 3 dBm. THE DMT IS MOUNTED DIRECTLY ONTO THE ANTENNA DURING THE INSTALLATION AND CAN ALSO BE EASILY MOUNTED ONTO EXISTING ANTENNA INSTALLATIONS



## 2. DAS MONITORING RECEIVER (DMR)

THE DMR IS CONNECTED TO THE DAS SYSTEM THROUGH A BAND-PASS FILTER (QUADPLEXER).

THE DMR RECEIVES THE UNIQUE ID FROM EACH OF THE DAS MONITORING TAGS (DMT) AND DETERMINES THE SIGNAL STRENGTH FROM EACH OF THE DMTs.

THE DATA IS CAPTURED, DECODED, AND STORED BY THE DMR AND THEN TRANSMITTED VIA THE GSM NETWORK TO THE CONTROL SERVER WHERE ALERTS ARE TRIGGERED BASED ON PER-CONFIGURED CRITERIA.

THE DMR IS POWERED WITH 220 VAC AND RECEIVES THE INFORMATION FROM DMT's AT 868 MHZ. THE DYNAMIC RANGE OF THE SYSTEM IS MORE THAN 60 DB.



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### 3. DAS CONTROL SERVER (DCS)

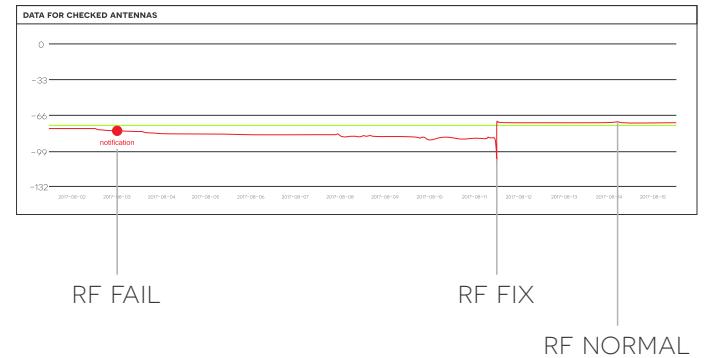
THE INTERNET CONNECTED DCS RECEIVES, HANDLES AND STORES DATA FROM THE DAS MONITORING RECEIVERS (DMR'S) AND PROVIDES THE INTERFACE BETWEEN THE REMOTE MONITORING SYSTEMS AND THE SYSTEM USERS.

A SECONDARY LIVE BACKUP SERVER, DATABASE REPLICATION AND ON- AND OFF-SITE BACKUPS ENSURE DATA SECURITY. THE DCS PROVIDES A WEB INTERFACE AS WELL AS SMS, E-MAIL AND SNMP TRAP CAPABILITY TO DISTRIBUTE THE DATA AND NOTIFICATIONS TO USERS.

#### SYSTEM OVERVIEW

NAME	STATUS	DISCARD	STATUS INFO	LAST REPORT	LAST SIGNAL	
CITY BANK	✓					
SECTOR 1	✓		DMR OK	2017-08-18 12:30:03		
BASEMENT 1 - ANT13	✓			2017-08-15 12:22:35	-74	
BASEMENT 1 - ANT14	✓			2017-08-15 12:25:58	-76	
BASEMENT 1 - ANT15	✓			2017-08-15 12:22:53	-70	
BASEMENT 1 - ANT16	✓			2017-08-15 12:26:32	-70	
GROUND FLOOR - ANT17	✓			2017-08-15 12:22:41	-71	
GROUND FLOOR - ANT18	✓			2017-08-15 12:26:17	-68	
GROUND FLOOR - ANT19	✗		2017-02-26	2017-08-15 12:29:25	-90	
GROUND FLOOR - ANT20	✓			2017-08-15 12:25:10	-60	
GROUND FLOOR - ANT21	✓			2017-08-15 12:28:35	-62	
1ST FLOOR - ANT22	✓			2017-08-15 12:23:23	-74	
1ST FLOOR - ANT23	✓			2017-08-15 12:22:41	-74	

#### UNIT DATA



#### FAILURE NOTIFICATION

TAG	DATE	TIME	ALARM DETAILS	SEVERITY
DAS MONITOR	09/02/2017	11:47:34	GREENTOWN HOSPITAL, SECTOR 3, ALL ANTENNAS DOWN	Critical
DAS MONITOR	09/02/2017	09:21:35	CENTURION MALL1, SECTOR 3, ANT34 DOWN	Major
DAS MONITOR	08/02/2017	02:43:01	RIVONIA MALL3, SECTOR1 SECTOR2 SECTOR3, ALL ANTENNAS DOWN	Catastrophic
DAS MONITOR	01/02/2017	02:24:55	GROENKLOOF HOSPITAL, SECTOR3, ANT22 SLOW DEGRADATION IN SIGNAL	Minor



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