Arab Satellite Communications Organization

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ARABSAT
Our world. Your world.

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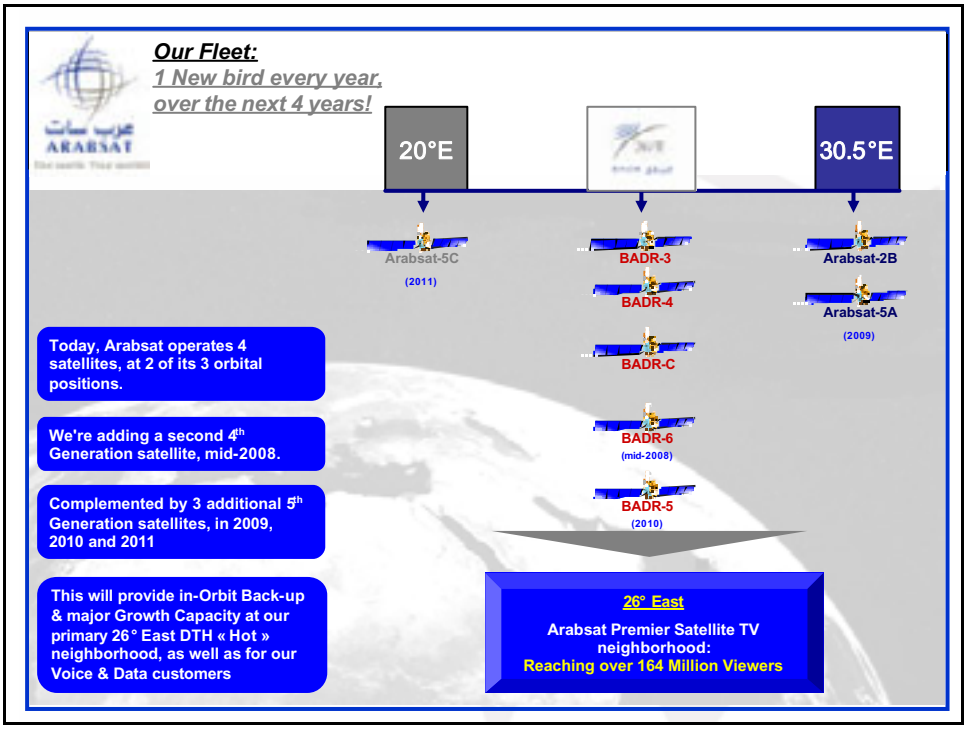
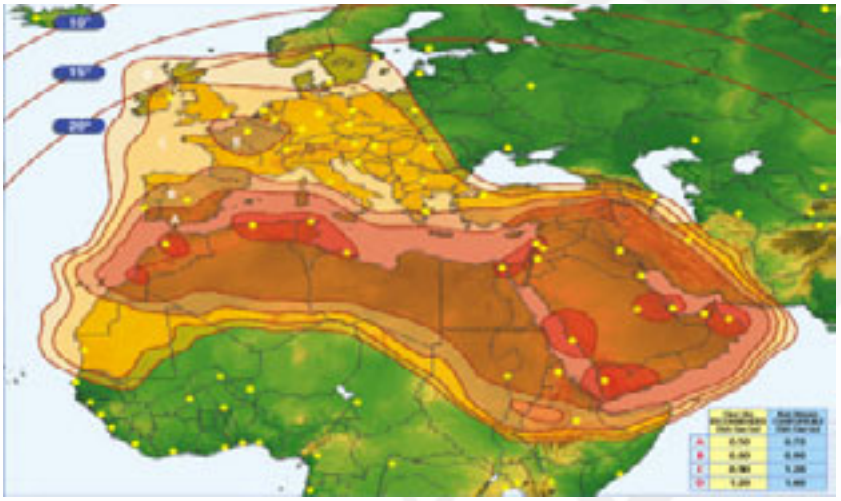


Satellite Fleet Facts

	BADR-C	BADR-3	BADR-4	BADR-6 (2008)	BADR-5 (2010)	Arabsat-5A (2009)	Arabsat-2B
Orbital Slot	26°E (Hot Spot)	26°E (Hot Spot)	26°E (Hot Spot)	26°E (Hot Spot)	26°E (Hot Spot)	30.5E	30.5E
Ownership	Lease (Panamsat)	Arabsat	Arabsat	Arabsat	Arabsat	Arabsat	Arabsat
Available Transponders	▪ 24 C	▪ 9 BSS Ku	▪ 12 FSS Ku ▪ 20 BSS Ku / 16°	▪ 24 C ▪ 20 BSS Ku /16	▪ 32 BSS Ku ▪ 12 FSS ▪ Switchable to 12 FSS (Apx 30 B) ▪ 12 FSS (14-14.5)	▪ 16 C (Normal) ▪ 10 C (Apx-30 B) ▪ 12 FSS ▪ 12 FSS Apx-30 B	▪ 22 C ▪ 12 FSS Ku
EIRPs (beam Peak)	▪ 40 dBW	▪ 50 dBW	▪ 52 dBW	▪ 42 dBW (C-band High), 40 dBW (C-Band Medium) ▪ 52 dBW (Ku-band)	▪ 52 dBW	▪ 53 dBW (Ku-Band) ▪ 42 dBW (C-Band)	▪ 41 dBW (C-Band High), 38 dBW (C-Band Medium) ▪ 47 dBW (Ku Band)
Primary Applications	▪ Analogue DTH TV ▪ To support small digital TV transmitters ▪ Mobile backhauling and VSAT	▪ Digital TV (Bouquets)	▪ Digital TV ▪ Data services	▪ Data Services ▪ Digital TV ▪ Trunking	▪ Digital TV ▪ Data services ▪ Different coverage beams ▪ Steerable beam	▪ Data services ▪ Trunking ▪ Backhauling ▪ Different coverage beams	▪ Trunking ▪ Occasional TV (analogue & digital) ▪ Video Contribution ▪ Backhauling ▪ Digital TV ▪ Internet ▪ Analogue TV ▪ Regional and domestic telephone networks
EoL	▪ 7/2008	▪ 2009	▪ 2024	▪ 2024	▪ 2025	▪ 2025	▪ 2/2012

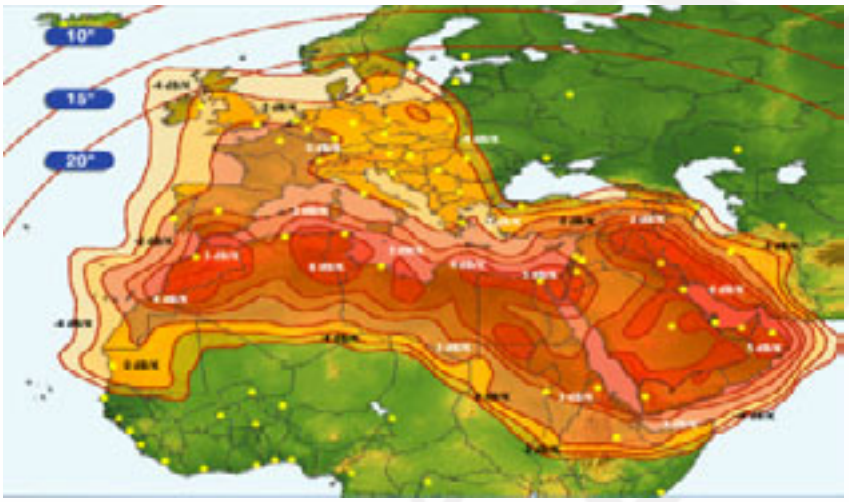
BADR-4: Ku-band/BSS DOWNLINK

Major MENA Cities: as low as 40cms!



BADR-4 UPLINK Footprint (Ku-band):

Special High G/T over Urban Areas for SNGs!



BADR-6

BADR-6: Ku-band/BSS & C-band

BADR-6: Highlights

- Launch: **Mid-2008** ? Youngest DTH Fleet in the Region!
  - State-of-the-art technology: **Quality & Reliability guaranteed for long-term**
- Designed tailored to our Customers' expressed needs & concerns
  - **Diversified products** offering;
  - Enables Arabsat to provide broadcasters with **complementary footprints**:
    - Including Europe w/BADR-4
    - Excluding Europe w/BADR-6
- **Larger reach than ever:**
  - Ku-band now covers 100% of the MENA region with high DTH power on a single beam, from Morocco & Algeria to the Gulf;
  - C-band encompassing a large part of Africa in its footprint.
- **Enhanced downlink power** in major urban centers:
  - Reduced dish sizes in main cities: 40-50 cms.

BADR-6: Ku-band/BSS DOWNLINK

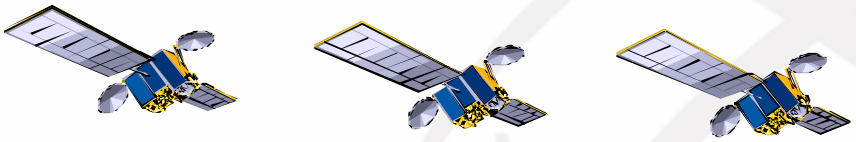
Expands to South MENA – Excl. Europe

	Clear Sky RECOMMENDED Dish Size (m)	Rain Margin COMFORTABLE Dish Size (m)
A	0.50	0.70
B	0.60	0.90
C	0.90	1.20
D	1.20	1.60

BADR-6 / C-band:

DOWNLINK - **MEDIUM Power** (EIRPs)

5th Generation Satellites



Arabsat-5A @ 30.5ºE – Launch: H2-**2009**

BADR-5 @ 26°E – Launch: Q1-**2010**

Arabsat-5C @ 20°E – Launch: **2011**

ARABSAT 5th Generation:
Highlights

A Strategic Move Supporting Arabsat's Expansion Strategy

Key Objective:
Providing adequate capacity to support Arabsat's expansion in the coming 10-20 years and accommodate anticipated Customers' growth.

Main Missions:

- Provide replacement capacity for **seamless service continuity**
- Provide extra **in-orbit back-up** capacity
- Provide business **expansion capacity for HD-TV**
- Provide **geographic expansion** to adjacent regions
- Protect spectrum and orbital slots

Contract: June, 2007 ? 2 satellites w/*EADS-Astrium* & *ThalesAleniaSpace*

- **Arabsat-5A:** Will replace Arabsat-2B; High power + back-up for BADR-6/C-band
- **BADR-5:** Will back-up BADR-4 & BADR-6 DTH, plus provide expansion capacity

3rd sat, Arabsat-5C: Option in 5th G contract to be exercised ? Launch 2011
C-band satellite, **will cover most of Africa** from 20°E

Arabsat-5A @ 30.5ºE:
C-band Configuration

Regular C-band:

- **Number of transponders:** Total of **16 Transponders**, 8x72 MHz + 8x36 MHz
- **Frequency band** (Uplink/Downlink)**:** 5.9-6.4 GHz / 3.7-4.2 GHz

Coverage:
- MEA (Middle East & Africa).
- One small spot covering Germany for connectivity N/S backbone

C-band/"Appendix-30B":

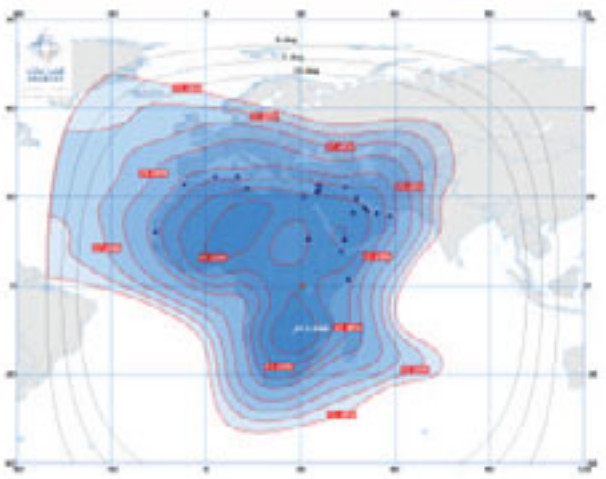
- **Number of transponders:** Total of 10 Transponders, 4x72 MHz + 6x36 MHz
- **Frequency band** (Uplink/Downlink)**:** 6.7-7.0 GHz / 4.5-4.8 GHz

Coverage:
- **MENA** (Middle East & North Africa) **& Central Asia.**
- Small spot covering **Germany** only for **North/South backbone connectivity**

Arabsat-5A @ 30.5ºE / C-band:
MEA beam (Middle East & Africa) **DOWNLINK Power** (EIRPs)
Up to 45 dBW*!

* beam center

HEMI beam:
Full MEA
(Middle East & Africa)

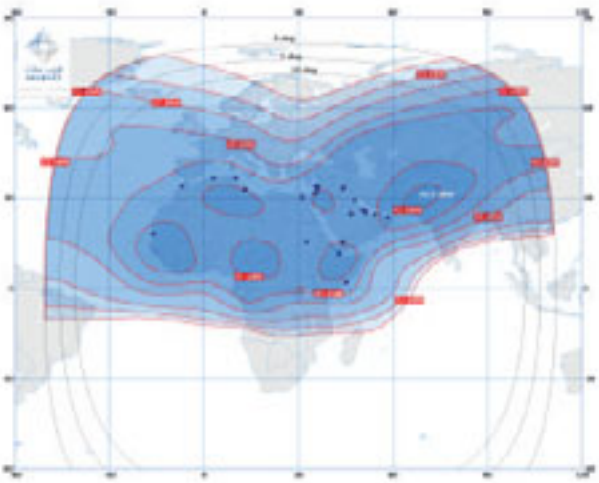


Regular C-band: 8x72 MHz + 8x36 MHz

Preliminary Coverage Drawing

Arabsat-5A @ 30.5ºE: C-band / APX-30B

MEA beam (Middle East & Africa) **DOWNLINK Power** (EIRPs)

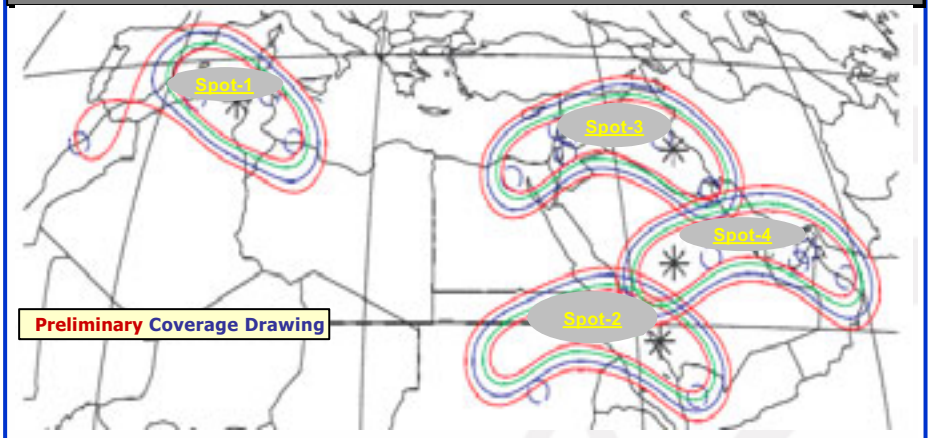


C-band/"Apx-30B": 4x72 MHz + 6x36 MHz

Preliminary Coverage Drawing

BADR-5 @ 26ºE:

Ka-band Beams / **UPLINK Footprints** (G/T)



Ka-band uplink G/T = Plotted level are 5.5 / 6.5 / 7.5 / 8 dB/K

Ku-band Pan-ARAB beam DOWNLINK Power (EIRP) = 48.5 dBW

Operations Concerns

- Arabsat is concerned on two operational issues affecting its bus iness and QoS
  - Undetermined Noise/Jamming in the range 13.75 – 14.00 GHz
  - Unauthorized intentional TV carriers accessing Arabsat system
- We seek other satellite operators experience on those two aspects and possible measures that can be taken in the frame of ISOG

Arab Satellite Communications Organization

Thank You!

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