

cell & sat



Cellular & Satellite



Cell & Sat

➤ Systems engineering company

- Established in 2005
- Located in Paris, France

➤ Mission

- Provide expertise at the cross-road of **Cellular & Satellite**
- Focus on alleviating the digital divide in Emerging markets

➤ Business positioning

- Consulting activities
 - *Assignments with cellular and satellite operators, regulators*
- Technical innovations
 - *System specifications, patents, optimization software*

www.cell-sat.com

Cell & Sat team

Didier Verhulst

France Telecom R&D
Alcatel Mobile
Skybridge, Alcatel Space

Jean-Marc Hanriot

Alcatel Mobile
Alcatel Mobile Broadcast
Alcatel-Lucent Services

Jérôme Poucin

Alcatel Telspace
Telecom consultant

Richard Deasington

PA-Consulting
VT iDirect

Michel Mouly

France Telecom R&D
Nortel Networks
Cell & Sys (GSM publications)

Pierre Gaudemet

Alcatel Space
Thales Alenia Space

Philippe Guillier

Alcatel Mobile
Alcatel-Lucent Africa

Gérard Dosogne

HSBC
Skybridge L.P.
Thales Alenia Space

+ Network of partners

- Market evaluations
- Software development
- Optimization products
- Patent licensing

Some references

➤ Technology evaluations

- Comparison of satellite networking solutions
- Evaluation of fixed and mobiles wireless technologies



RASCOMSTAR-QAF
THE PAN-AFRICAN SATELLITE OPERATOR



➤ Business strategy and Marketing

- Market assessment
- Definition of service/product offering
- Business planning



eutelsat
communications via satellite



Business Services



➤ Cellular & Satellite operations

- Technical audit of mobile operator
- Satellite network engineering



outremertelecom
GROUPE

➤ Specifications and product developments

- Cellular backhaul optimisation software
- Definition and validation of satellite + GSM rural solutions



Alcatel-Lucent



Example 1: Definition of service offering



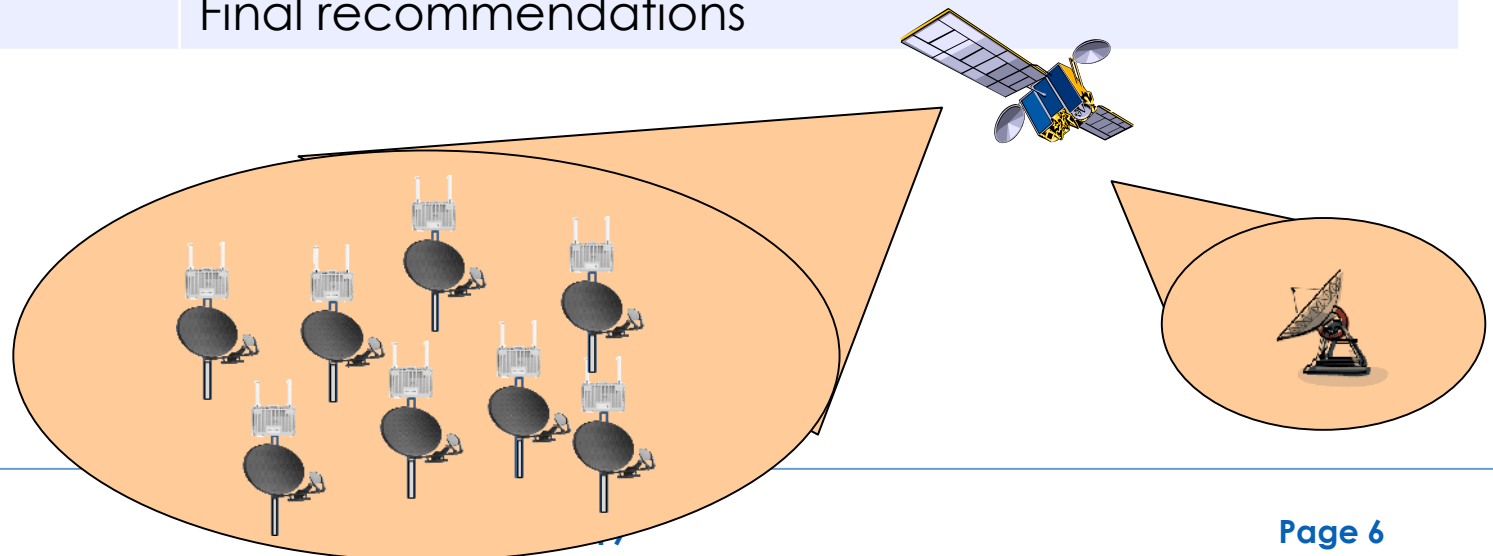
Topic	Cellular backhaul
Customer	Global Satellite Operator
Purpose	Build backhaul service portfolio
Inputs	Available and planned bandwidth capacity Interviews with Mobile Operators in LATAM and Africa Analysis of Satellite Ground systems, Mobile radio network equipment and solar power systems
Outputs	Competitive positioning versus other global players Assessment of market size Segmentation of market Definition of an optimized technical solution Definition of a Managed Service offering Business case simulations



Example 2: Supplier selection



Topic	Satellite Ground System and Space segment
Customer	Mobile Operator
Purpose	Select VSAT vendor and satellite provider for a network of 500 small cells
Inputs	Business requirements from Operator (coverage, traffic and deployment planning)
Outputs	Request for Quotation to vendors Analysis of technical and commercial answers Final recommendations



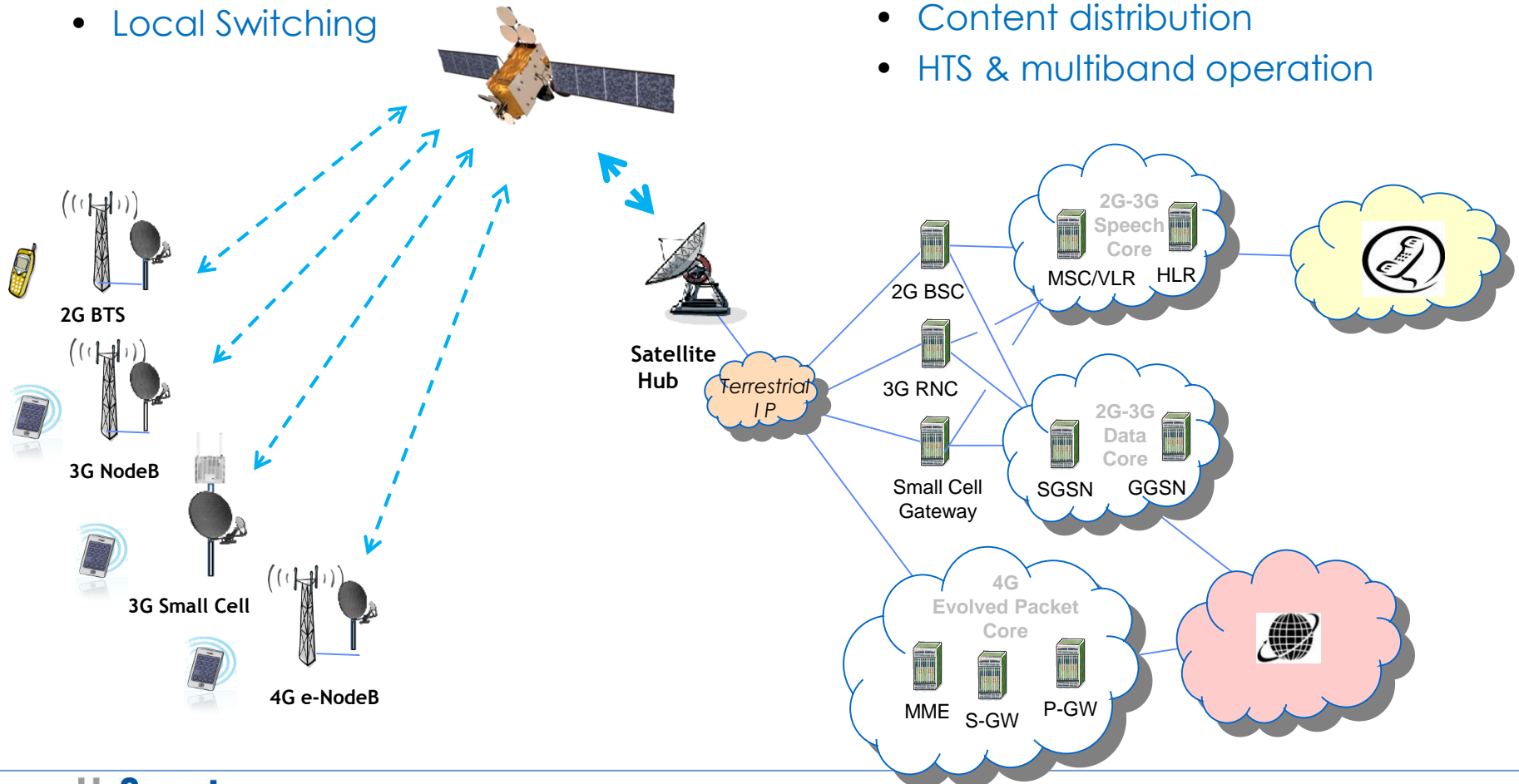
Satellite backhaul optimization

➤ Optimization for speech services

- Silence detection & compression
- Local Switching

➤ Optimization for data services

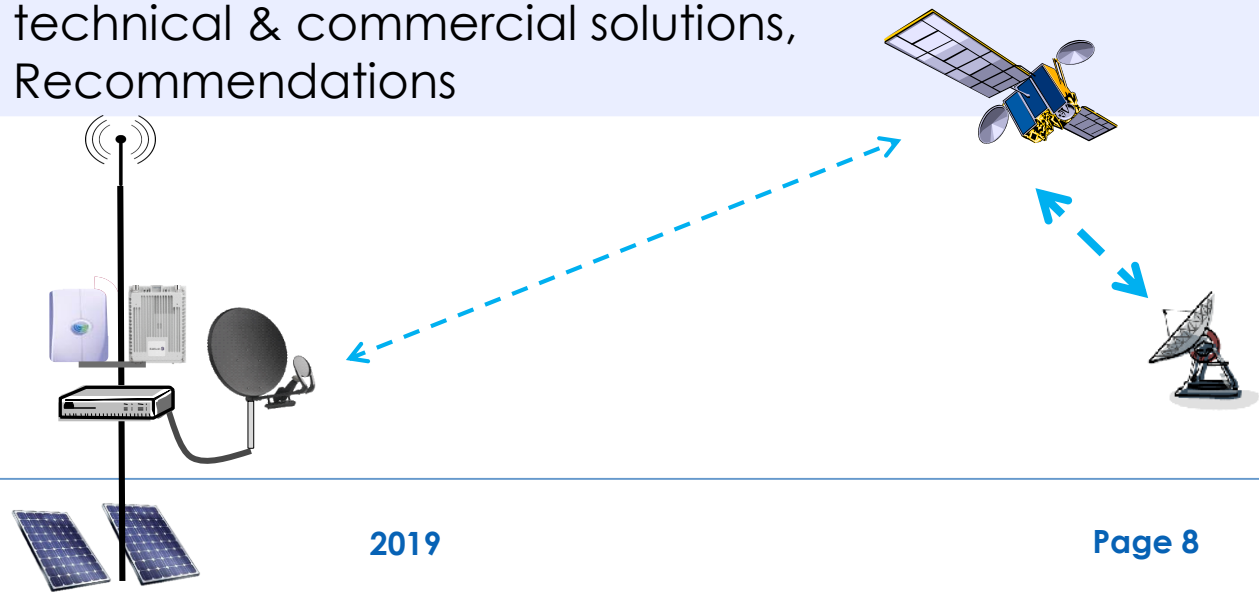
- Compression, acceleration
- Content distribution
- HTS & multiband operation



Example 3: Cellular rural coverage



Topic	Greenfield rural site
Customer	Satellite Operator & Mobile Operators
Purpose	Select a low cost full configuration for rural coverage including RAN, Infrastructure, Energy, VSAT
Inputs	Coverage & service requirements from Mobile Operators, Expected revenues from rural sites: speech, data
Outputs	Request for Quotation to vendors, analysis of technical & commercial solutions, Recommendations



Rural site optimization

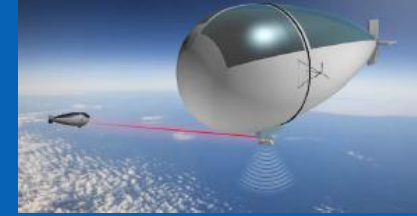
➤ Cellular coverage extension in low density areas



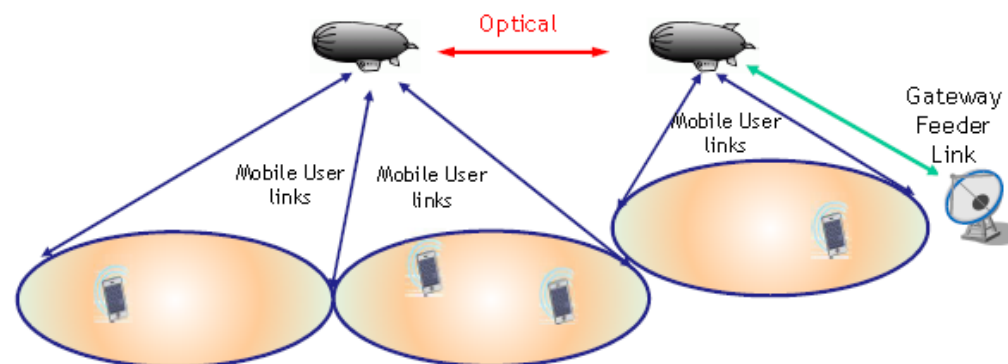
2G/3G/4G small cell
+ satellite
+ solar energy



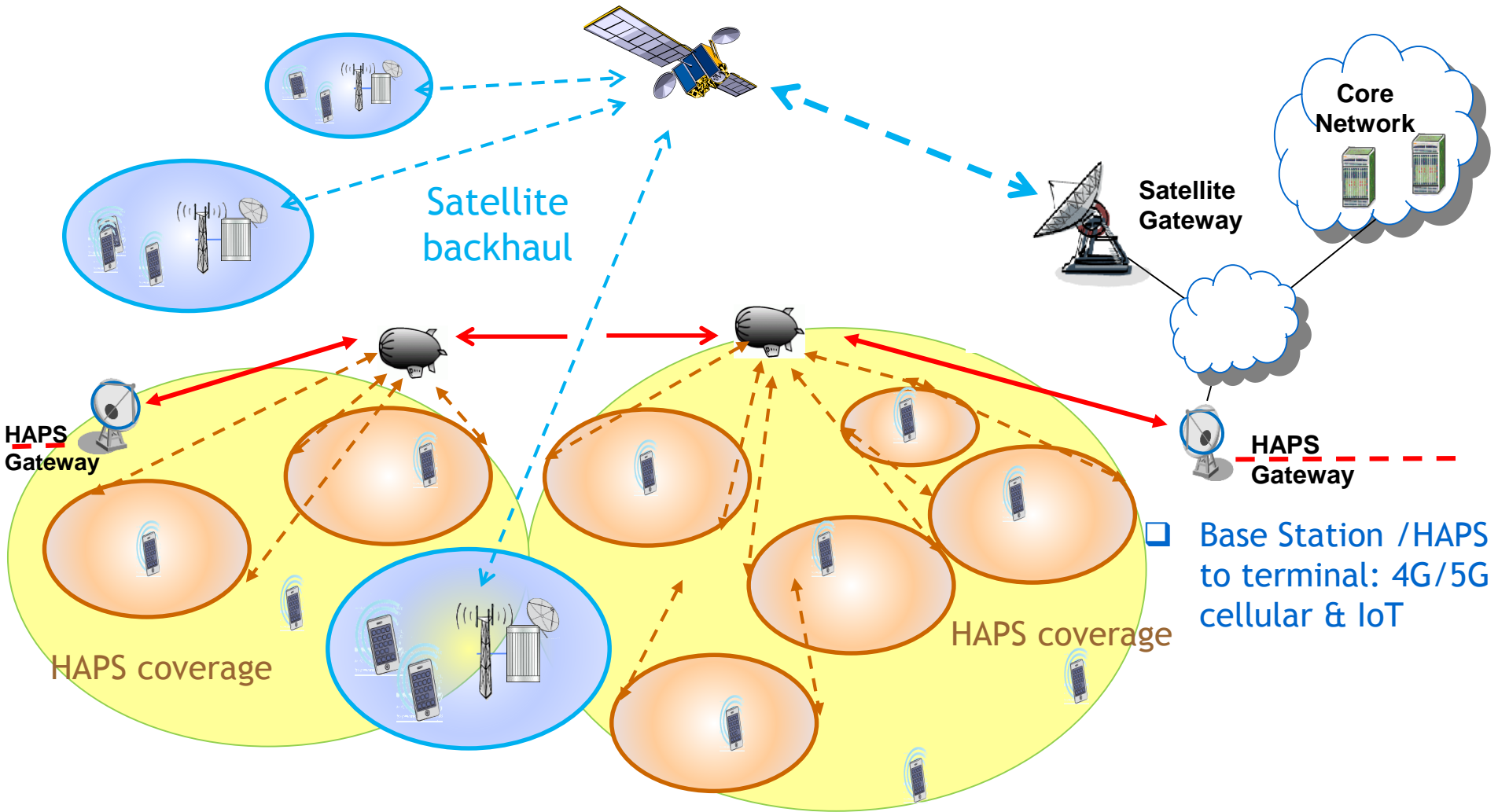
Example 4: Technology evaluation



Topic	HAPS (High Altitude Platform)
Customer	Mobile Operator
Purpose	Assess the technical feasibility and the business case of providing 4G/5G coverage from a Stratospheric Balloon
Inputs	Business requirements from Operator (coverage and capacity) Aeronautical and environmental capabilities of the platform
Outputs	Specification and performance simulation of a telecom payload including active array antenna Cost comparison with terrestrial mobile coverage



Satellite & HAPS complementarity for rural services





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