CHAMBRE DES DEPUTES

Session ordinaire 2010-2011

AT/vg

Commission de l'Enseignement supérieur, de la Recherche, des Media, des Communications et de l'Espace

Procès-verbal de la réunion du 29 novembre 2010

ORDRE DU JOUR :

Echange de vues avec des représentants de la Société européenne des satellites

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M. Romain Bausch, M. Philippe Glaesener, M. Jean-Paul Hoffmann, M. Ferdinand Kayser, M. Pierre Margue, de la Société européenne des satellites
M. Pierre Goerens, du Ministère d'Etat, Service des Médias et des Communications

Mme Anne Tescher, de l'Administration parlementaire

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*

Présidence : M. Lucien Thiel, Président de la Commission

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Echange de vues avec des représentants de la Société européenne des

satellites (SES)

Les représentants de la SES présentent les derniers développements de leur entreprise, pour les détails desquels il est prié de se référer à la présentation Powerpoint reprise en annexe du présent procès-verbal.

De l'échange de vues, il y a lieu de retenir succinctement les éléments suivants :

Le secteur satellitaire

La SES opère 44 satellites dont 14 sous concession de l'Etat luxembourgeois. Il est planifié de lancer 12 nouveaux satellites au plus tard en 2014. L'augmentation de la capacité satellitaire est principalement destinée à couvrir les marchés des pays émergents.

Les services de télévision génèrent 70% du bénéfice du groupe SES, le segment des services de communications électroniques ainsi que celui des services offerts aux gouvernements et organisations internationales génèrent chacun 15% du bénéfice du groupe.

L'Etat luxembourgeois (BCEE et SNCI inclus) détient un sixième des actions de la SES et un tiers des droits de vote. En vertu des statuts de la SES, tout actionnaire qui veut acquérir une participation d'au moins 20% des actions de la société doit être accepté par une majorité qualifiée des actionnaires existants. Cela signifie que tout nouvel actionnaire qui veut avoir une participation majeure doit avoir l'accord de l'Etat luxembourgeois.

Du point de vue concurrence, il y a lieu de constater que la SES est premier du marché européen. Sur le marché mondial il a y 4 grands opérateurs de satellites :
- SES avec 25% des parts du marché ;
- *Intelsat* avec 25% des parts du marché ;
- *Eutelsat* avec 14% des parts du marché ;
- *Telesat* avec 7% des parts du marché.

Pour rappel, *Eutelsat* et *Intelsat* ont été à l'origine des organisations intergouvernementales avant d'être privatisés. Le degré de concentration du marché est élevé vu que les 4 grands opérateurs détiennent 71% des parts du marché. Les 29% des parts du marché restant sont assez fragmentés entre 30 à 35 différents opérateurs. Ces opérateurs sont souvent installés dans des pays de l'Amérique du Sud, de l'Asie ou de l'Afrique.

Le secteur des satellites de communication n'a pas été affecté par la crise financière, ce qui s'explique entre autres par l'existence des contrats à long terme pour les services de télévision.

La croissance économique de la SES a plusieurs origines :
- la croissance du secteur télévisuel suite à l'introduction de la télévision HD en Europe et en Amérique du Nord ;
- la conquête des nouveaux marchés des pays émergents ;
- la multiplication des services offerts aux gouvernements et institutions internationales.

En ce qui concerne ce dernier point, il y a lieu de noter que les gouvernements opèrent de moins en moins leurs propres satellites et louent désormais des capacités de satellites de communications, afin de réduire les dépenses publiques.

La politique spatiale européenne

L'article 189 du Traité de Lisbonne confère une compétence partagée à l'UE en matière de politique spatiale. Or la mise en œuvre du programme européen de politique spatiale a été retardée suite aux positions divergentes de l'Allemagne et de la France. Selon la position française, l'ESA devrait s'intégrer dans le cadre communautaire et le financement des projets serait à assurer par le budget de l'UE, tandis que l'Allemagne préfère maintenir le statut actuel de l'ESA et le principe du retour industriel. En principe, les représentants de la SES sont en faveur de la solution allemande avec le principe du retour industriel, en invoquant pourtant que pour certains projets relevant du domaine de la sécurité un financement par le budget communautaire serait avantageux. Ils supposent que le compromis entre les positions divergentes sera de préserver le statut de l'ESA tout en finançant divers projets par l'UE. Il serait intéressant de connaître la position du gouvernement luxembourgeois à ce propos.

La SES profite de la politique spatiale européenne en ce sens qu'elle participe à de nombreux programmes (p.ex. Galileo, Egnos, GMES).

Répondant à une question afférente, les représentants de la SES estiment que Galileo sera opérationnel fin 2013, début 2014.

La stratégie numérique de l'UE

La SES soutient l'objectif de la stratégie numérique d'offrir à chaque citoyen de l'UE jusqu'en 2013 un accès haut-débit. Le satellite est d'ailleurs utile afin de couvrir des régions difficilement accessibles pour le déploiement d'infrastructures. La SES critique pourtant l'objectif d'offrir en 2020 à chaque citoyen un accès de 30 Mbit/s et à 50% des citoyens un accès de 100 Mbit/s. Les représentants de la SES estiment que des vitesses tellement élevées sont au-delà des besoins réels des citoyens. Un service public, qui est en partie subventionné par l'UE et certains gouvernements nationaux, devrait se limiter aux services dont le client a réellement besoin. Notons encore que la technologie des satellites ne peut pas offrir les mêmes vitesses de débit que la fibre optique.

Les coûts du déploiement de la fibre optique se situent entre 38 et 58 milliards d'euros pour une couverture de 100% des accès de 30 Mbit/s et se situent entre 181 et 268 milliards d'euros pour une couverture de 50% des accès de 100 Mbit/s. La SES est d'avis que ces coûts sont démesurés, d'autant plus que des subventionnements seront nécessaires puisque certains opérateurs de télécommunications ne pourront financer en totalité le déploiement des infrastructures.

La SES plaide pour une solution mixte de différentes technologies. Une partie de la bande passante des réseaux terrestres est destinée aux services de télévision HD. Ce service pourrait aussi bien être transmis par satellite et libérer ainsi une partie de la bande passante. Des solutions hybrides utilisant les satellites et les réseaux terrestres seront économiquement les plus avantageux.

Il y a lieu de constater que les grands opérateurs de télécommunications sont confrontés à une saturation de leurs réseaux. Une des raisons est l'accroissement des services de vidéos lesquels nécessitent une partie importante de la bande passante. En vue de soulager les réseaux, certains opérateurs ont entamé des négociations avec la SES. Dans le cadre de leurs offres *triple play* (c'est-à-dire accès Internet, téléphonie fixe et télévision), les clients reçoivent une partie des services par satellite et une autre partie par réseau terrestre sans qu'ils s'en rendent compte. Ces coopérations avec les opérateurs de télécommunications débuteront en 2011 et se multiplieront certainement à l'avenir. De plus, les opérateurs de télécommunications sont invités par leur gouvernement respectif à investir dans leurs réseaux alors que leur situation économique ne leur permet pas de tels investissements à

grande échelle. Une coopération avec les opérateurs de satellites est avantageuse au niveau des régions où le déploiement des réseaux n'est pas rentable et au niveau des zones à réseaux surchargés.

A noter que grâce à l'évolution technologique les dimensions des antennes paraboliques sont réduites. Un axe de coopération entre la SES et l'Université du Luxembourg porte d'ailleurs sur l'accroissement de l'efficience des récepteurs.

Les représentants de la SES soulignent que dans le cadre de la stratégie numérique, les opérateurs terrestres sont favorisés puisque le déploiement des infrastructures permet de créer des emplois dans les régions mêmes. Il est clair que certaines régions préfèrent cette approche.

L'influence des opérateurs de satellites

Le lobby de l'industrie satellitaire au niveau de l'UE reste limité en comparaison au lobby des opérateurs de télécommunications. La SES est représentée à Bruxelles par la *European satellite operators association (ESOA)*. Au sein du secteur des télécommunications, les opérateurs de satellites sont minoritaires. Le poids des opérateurs de satellites est également limité au sein de l'industrie des satellites, où ce sont les grands constructeurs de satellites comme EADS ou Thalès qui dominent.

La politique du spectre radioélectrique

Les représentants de la SES estiment que la situation s'est apaisée depuis l'abandon de la proposition de la Commission européenne de se voir attribuer les compétences de négociation des fréquences auprès de l'UIT. La SES est en faveur d'une coordination au niveau européen de la politique du spectre radioélectrique, sans que pour autant la souveraineté des Etats membres soit mise en péril.

La coopération avec l'Université du Luxembourg

La SES coopère avec l'Université du Luxembourg à deux niveaux. Il s'agit de la collaboration avec le Centre interdisciplinaire Security, Reliability and Trust (SnT) ainsi que de la création d'une chaire de droit de l'espace, des télécommunications et des médias. En matière de l'espace, il est important que l'Université du Luxembourg coopère avec la *International Space University* (ISC) à Strasbourg.

Les défis des operateurs de satellites

Répondant à une question afférente, les représentants de la SES expliquent que les opérateurs satellitaires seront essentiellement confrontés aux défis suivants :
- L'Europe et l'Amérique du Nord contrôlent la majorité des positions orbitales et des fréquences. A long terme, les pays émergents pourront exiger une redistribution plus équitable des positions orbitales et de l'allocation des fréquences auprès de l'Union Internationale des Télécommunications (UIT).
- La concurrence des réseaux terrestres des opérateurs de télécommunications et des câblo-opérateurs.
- Une communautarisation de la gestion du spectre radioélectrique et la perte de la souveraineté en matière de négociation des positions orbitales et des fréquences associées auprès de l'UIT.

Luxembourg, le 2 décembre 2010

La secrétaire,
Anne Tescher

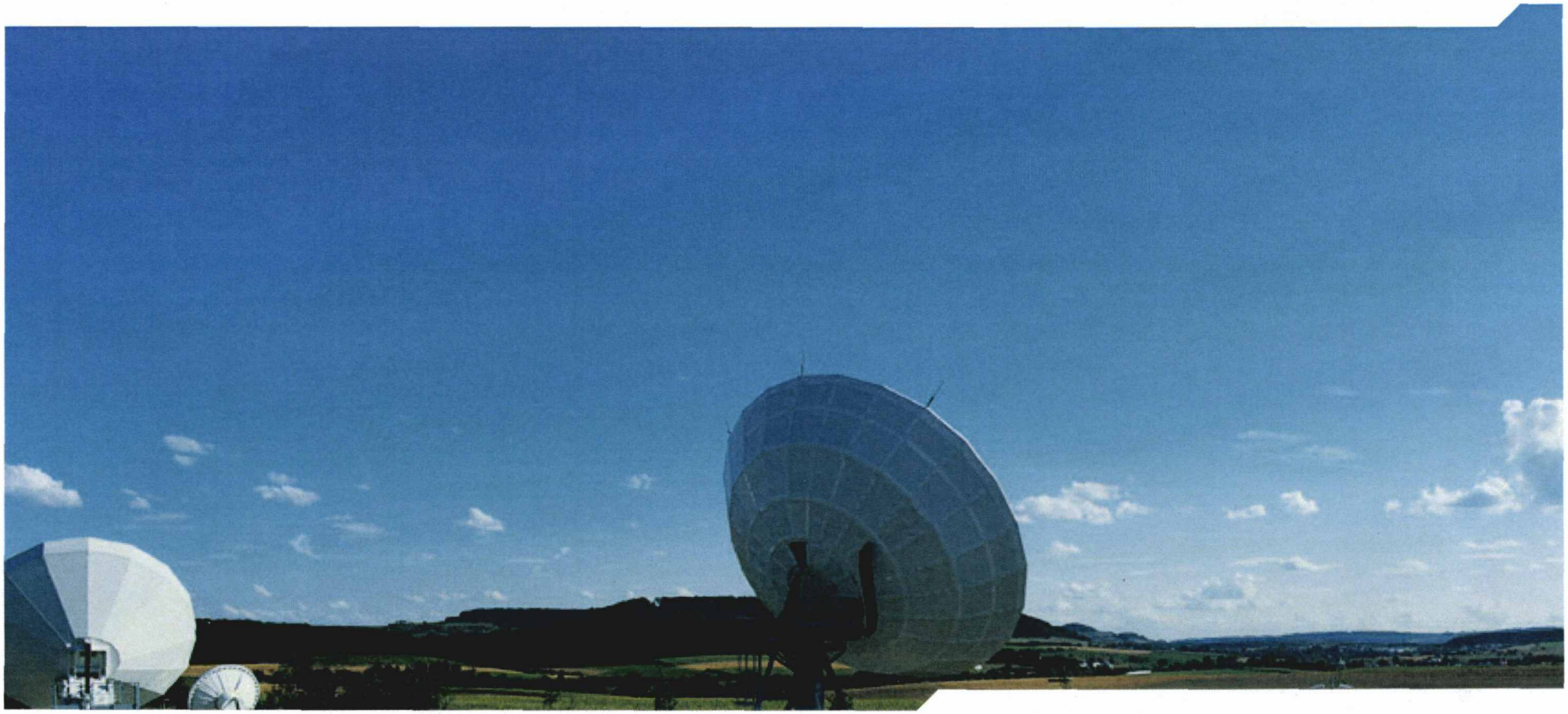
Le Président,
Lucien Thiel

Annexe :

Présentation Powerpoint

Meeting with Commission de l'Enseignement supérieur, de la Recherche, des Media, des Communications et de l'Espace

SES



November 29, 2010

Agenda

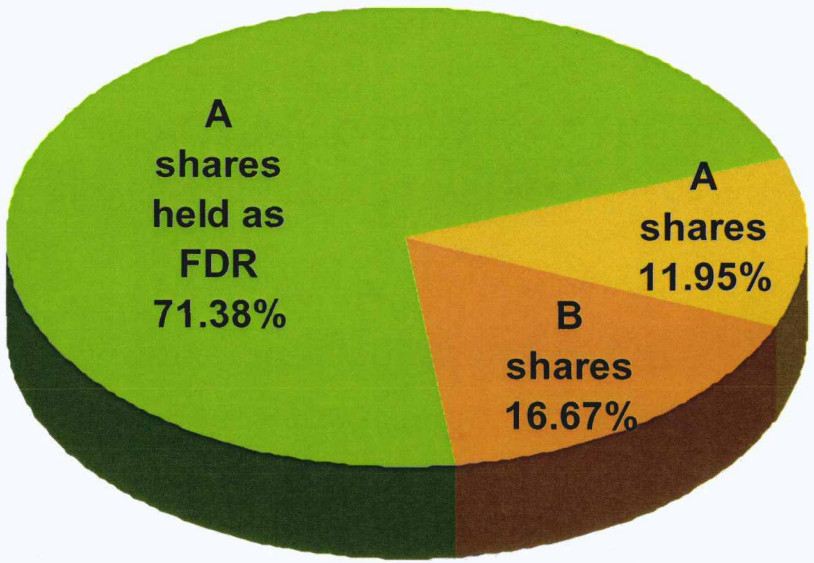
1. SES today
2. O3b
3. Governments & Institutions Segment
4. Regulatory and Policy Matters
5. Corporate Social Responsibility
6. Betzdorf Site Development

SES Group Today

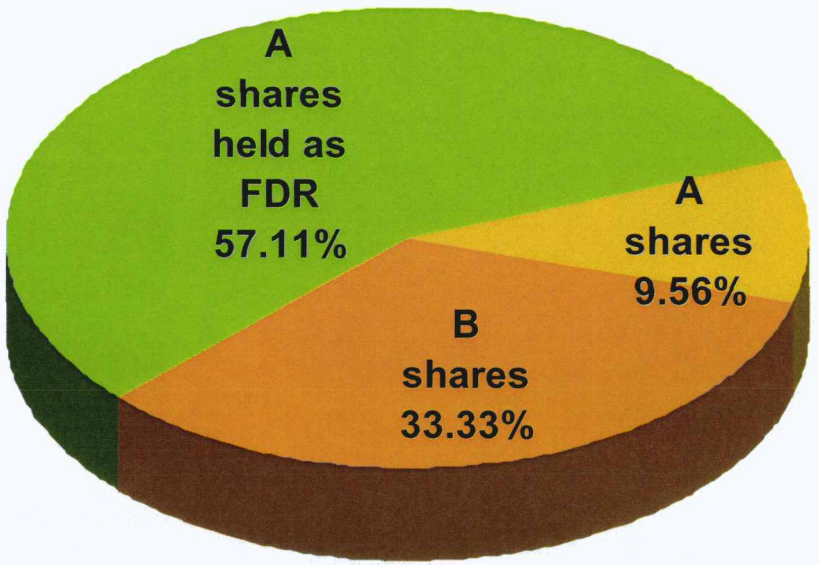
- SES operates a global network of 44 geostationary satellites
- We provide essential connectivity
  - Video, especially DTH
  - Government networks
  - Enterprise networks, including telcos
- SES is capturing growth in all these areas
  - Recurring revenue CAGR 2010-2012 of around 5%
- 12 satellites planned for launch between now and 2014
- Transponder capacity increase of over 30%
  - on the 1,173 transponders commercially available at end 2009
- Focus on delivering shareholder value

SES shareholder structure

SES Shareholdings(*)(**)
% Economic Interest



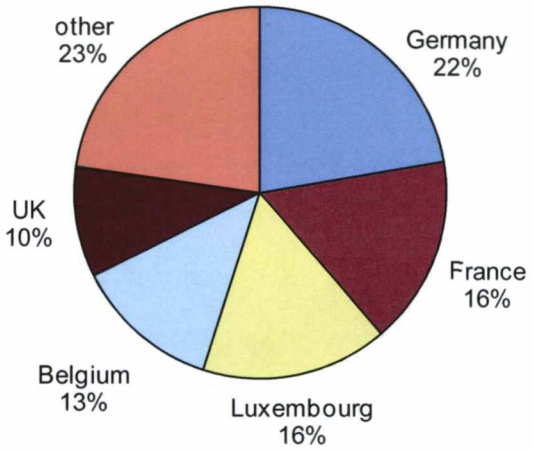
SES Shareholdings(*)(**)
% Voting Rights

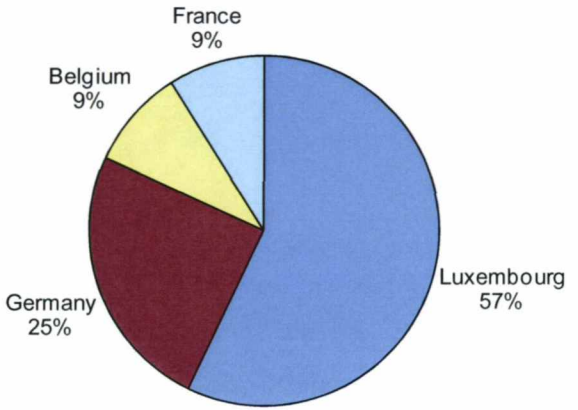


* As of 10 November 2010.
** B Shares are held by the Luxembourg State and two Luxembourg State banks.

Employee Statistics – A culture of global diversity

- 457 staff based in Betzdorf, representing 28 nationalities
- Germany, Luxembourg, France, Belgium and UK represent the largest contingent amongst the **nationalities** employed by SES S.A. and its affiliate companies based in Betzdorf
  - „Others“ include the following nations: American, Austrian, Brazilian, Canadian, Croatian, Czech, Danish, Dutch, Indian, Iranian, Irish, Italian, Mexican, Polish, Portuguese, Romanian, Russian, South African, Spanish, Swedish, Swiss,Turkish
- Luxembourg remains the “main” **country of residence** followed by Germany, Belgium and France

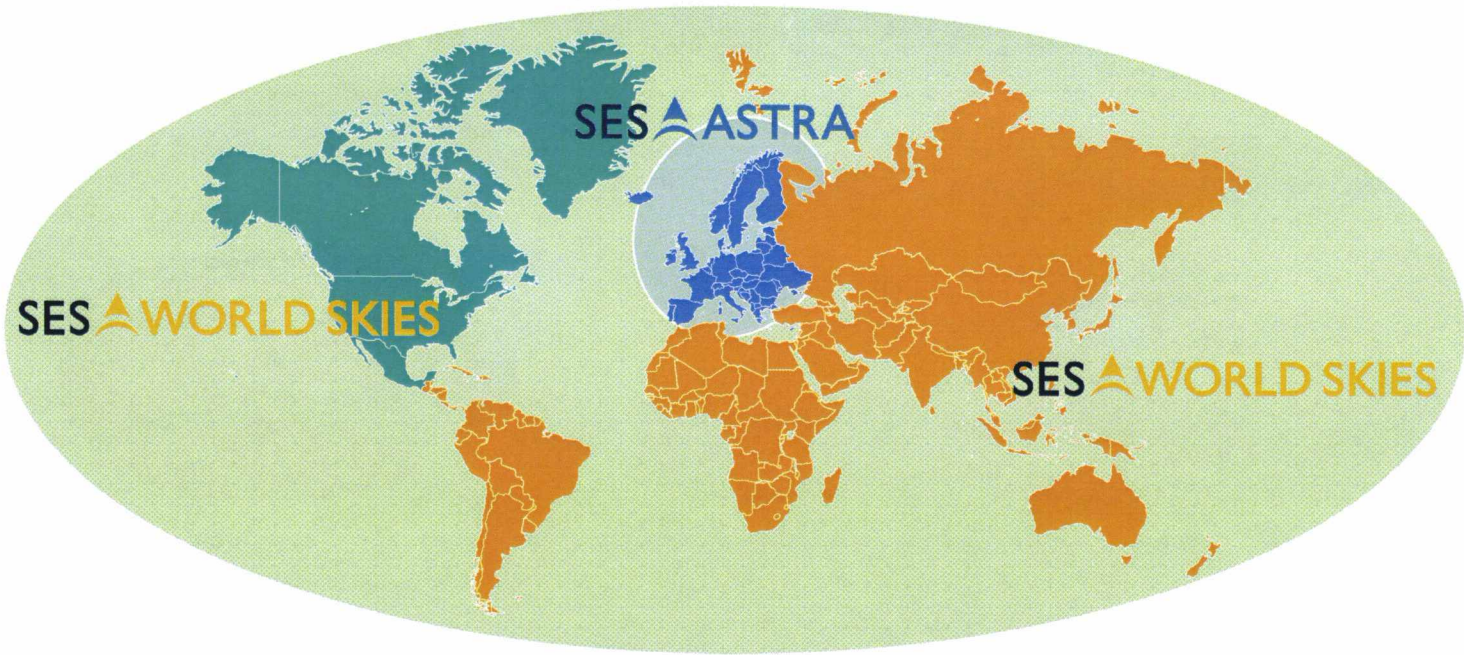




The SES structure

* Approx., depending on the final financing round

Global Reach, Regional Focus

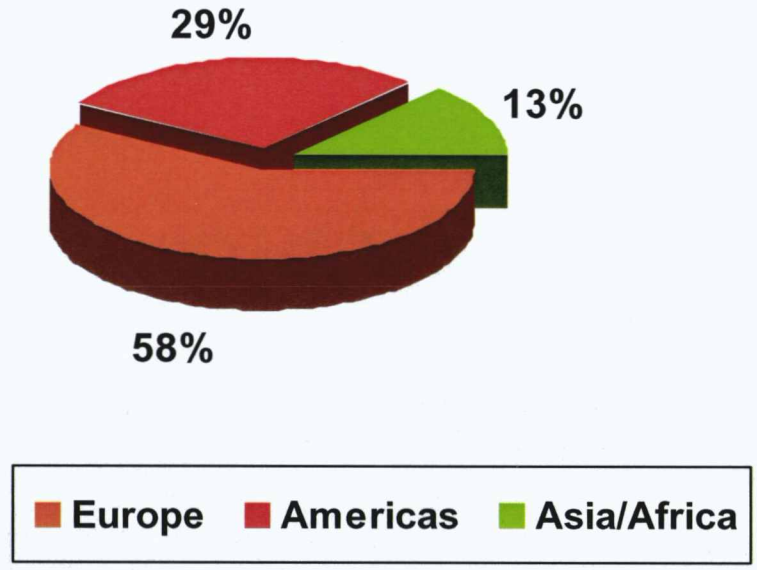


- SES provides global reach through its wholly owned operating units:
  - **SES ASTRA**:
    - Europe's No. 1 provider of DTH transmission, reaching over 125 million households, including cable
  - **SES WORLD SKIES**:
    - A premier provider of satellite services to over 550 customers across 100 countries
    - A major player in broadcasting for North America, reaching some 100 million households
    - Substantial government services business, as well as serving enterprise networks and video customers worldwide

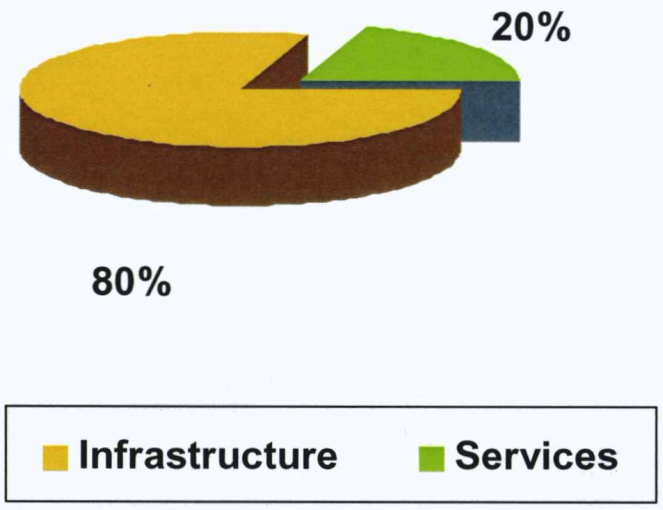
SES

2009 revenue breakdown

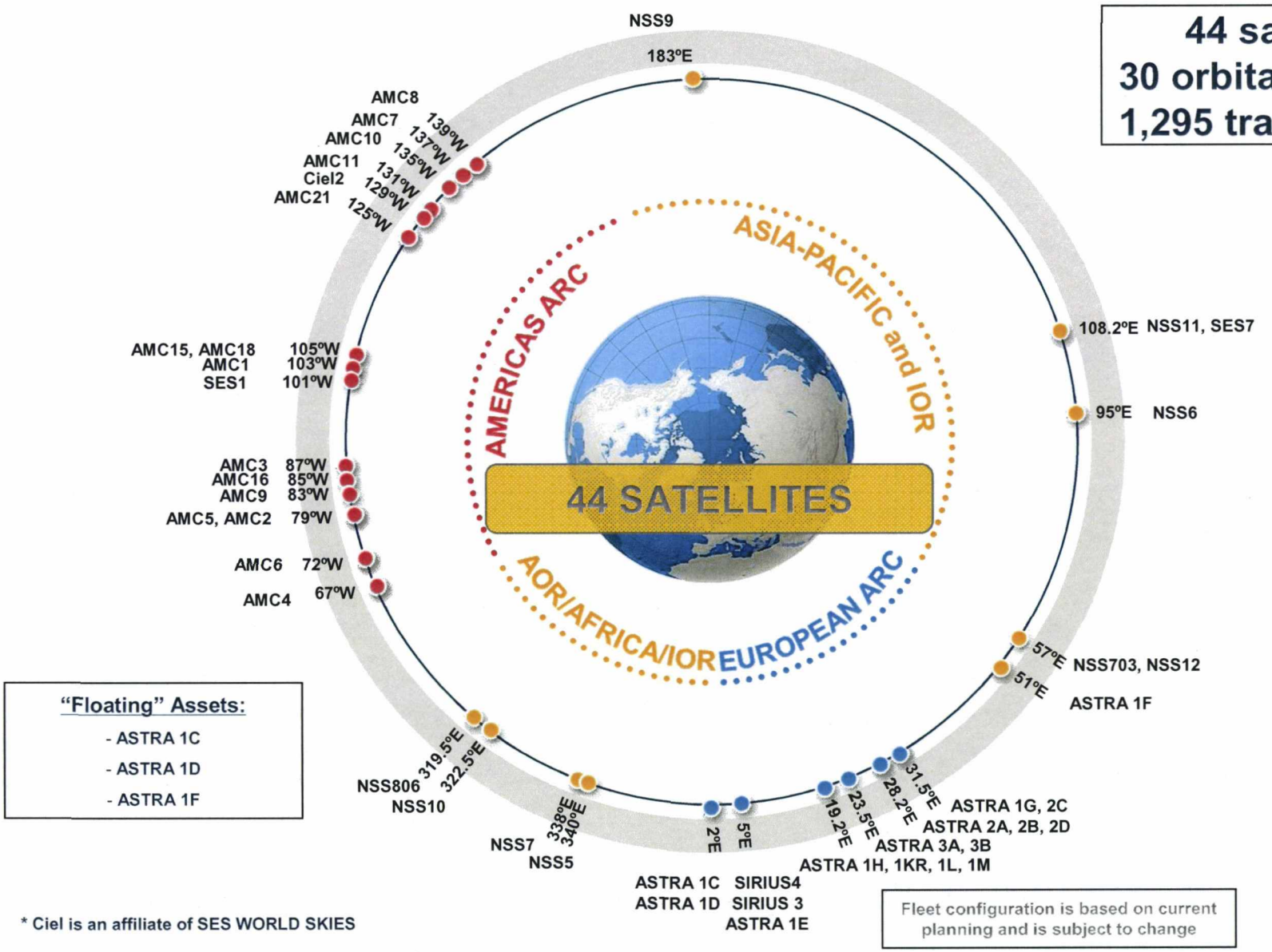
Breakdown by region (in %)



Business segmentation (in %)



Group Fleet – Today



44 satellites
30 orbital positions
1,295 transponders

"Floating" Assets:

- ASTRA 1C
- ASTRA 1D
- ASTRA 1F

* Ciel is an affiliate of SES WORLD SKIES

Fleet configuration is based on current planning and is subject to change

SES

Enhanced fleet delivers 30% more capacity

SES Group	2010 Q1	2010 Q2	2011 Q1	2011 Q2	2011 Q3	2011 Q4	2012 Q4	2013 Q1	2013 Q2	2014 Q1	Total
SES ASTRA		ASTRA 3B	YahLive	ASTRA 1N		ASTRA 4B (Sirius 5)	ASTRA 2F 4)	ASTRA 2E 4)	ASTRA 5B 3)	ASTRA 2G 4)	
SES WORLD SKIES North American fleet		SES-1	SES-2		QuetzSat-1	SES-3					
SES WORLD SKIES International fleet	NSS-12 / NSS-5 1)	SES-7		SES-4 (NSS-14) 2)				SES-6 (NSS 806R) ★			
Total new capacity (36 MHz equivalent)	82	40	23	49	32	64	12	61	21	10	394
Total incremental after fleet movements											360

Note: - Quarters refer to launch dates, operational service date is usually in the quarter thereafter

★ Updated from Q1 publication as of 23 April 2010

Replacement
Incremental
Replacement & Incremental

360 additional transponders over the 1,173 at end 2009

- 12 satellites are in the pipeline for launch between now and 2014 providing replacement and incremental capacity
- Growth capacity will be delivered this year on NSS-12, ASTRA 3B, NSS-5 (relocated), and via the acquisition of ProtoStar-2 (SES-7)
- In total 360 incremental transponders deliver over 30% additional capacity compared to 31 December 2009
- SES' investment programme has a strong focus on growing market segments
- All infrastructure projects exceed IRR hurdle rate of 10-15%

SES

Expanding In Our Global Markets

- SES is focused on delivering growth
- Capacity increase of over 30% by end 2014
- Capex focus on high growth emerging markets
- Rising Free Cash Flow as replacement capex reduces as of 2012
  - enabling new investments in growth opportunities
  - supporting SES' progressive dividend policy
  - potential for share buybacks / cancellation
- EUR 7.1 billion contract backlog (> 4 times 2009 revenue)
- Well-established, market-leading global business

Growth Drivers

- Television offerings continue to multiply in all markets
- HD TV acceleration, coupled with higher bandwidth requirements
  - 3D TV development will create additional demand in the future
- Increasing demand for Government services
- Satellite offerings in developing markets are expanding
  - Central and Eastern Europe, Latin America, Africa, and Asia
- Growth in services activities related to the provision of transponder capacity

SES' Strategy

- Strategic focus is on developing SES' core business of satellite infrastructure to meet growing transponder demand

- **SES' core infrastructure business serves:**
  - Broadcasters
  - Telecom and cable companies
  - Government sector
  - Enterprise

- **Supporting activities, mainly services:**
  - Complement or develop core business
    - develop the role of satellites versus other technologies
    - develop "pull-through" revenues
    - hedge risks of technology concentration
  - Develop new revenue streams based on existing competencies
    - entering new markets and applications (e.g. Hybrid DTH / terrestrial broadband solutions)
    - investment in O3b Networks, to deliver high speed, flexible Ka-band connectivity in developing markets

Agenda

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What is O3b ?

O3b Networks

Connecting

the "other three billion" people

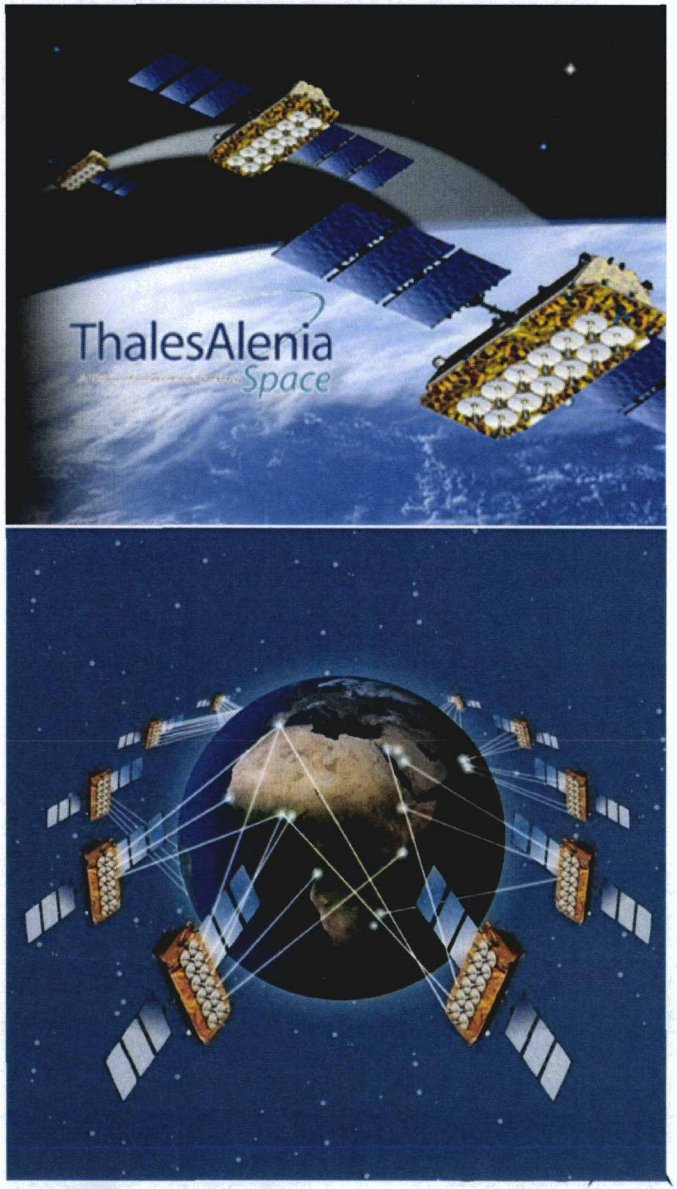
O3b is building a next-generation satellite constellation that will enable telecommunication operators to offer flexible, faster, and more affordable connectivity to their customers in a profitable and sustainable way.

O3b has the flexibility to meet the capacity and network demands of Mobile/Wireless Network Operators, Telcos, ISPs, Government Entities and Satellite Service Providers in the emerging markets of the world.

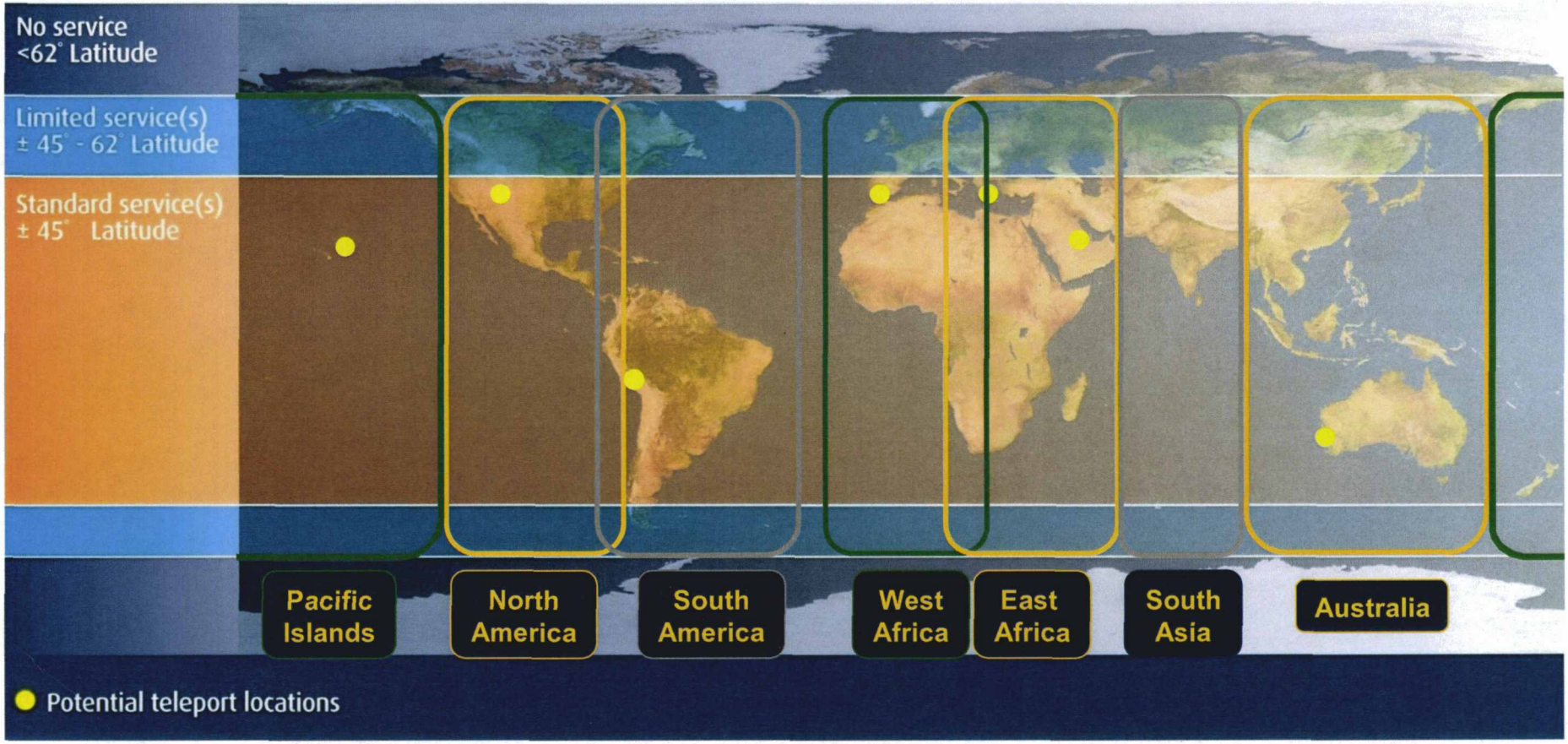
SES

O3b Constellation Overview

- **Fleet and Orbit Characteristics:**
  - Initial constellation of 8 satellites
  - Fully funded constellation comprised of 20 satellites
  - Constellation technical limitation = 120 satellites
  - Orbital altitude = ~8000 km
- **Space Vehicle:**
  - Designed, integrated and tested by Thales Alenia Space
  - Flexibility of beams (steerable) and modes of operation
  - Joint SES / O3b team to manage procurement
- **Beam Characteristics:**
  - Ka-band
  - 84 Gbps available in the 8 satellite constellation
  - 228 Gbps in the 20 satellite constellation
  - Beam Coverage: Diameter up to 600 km



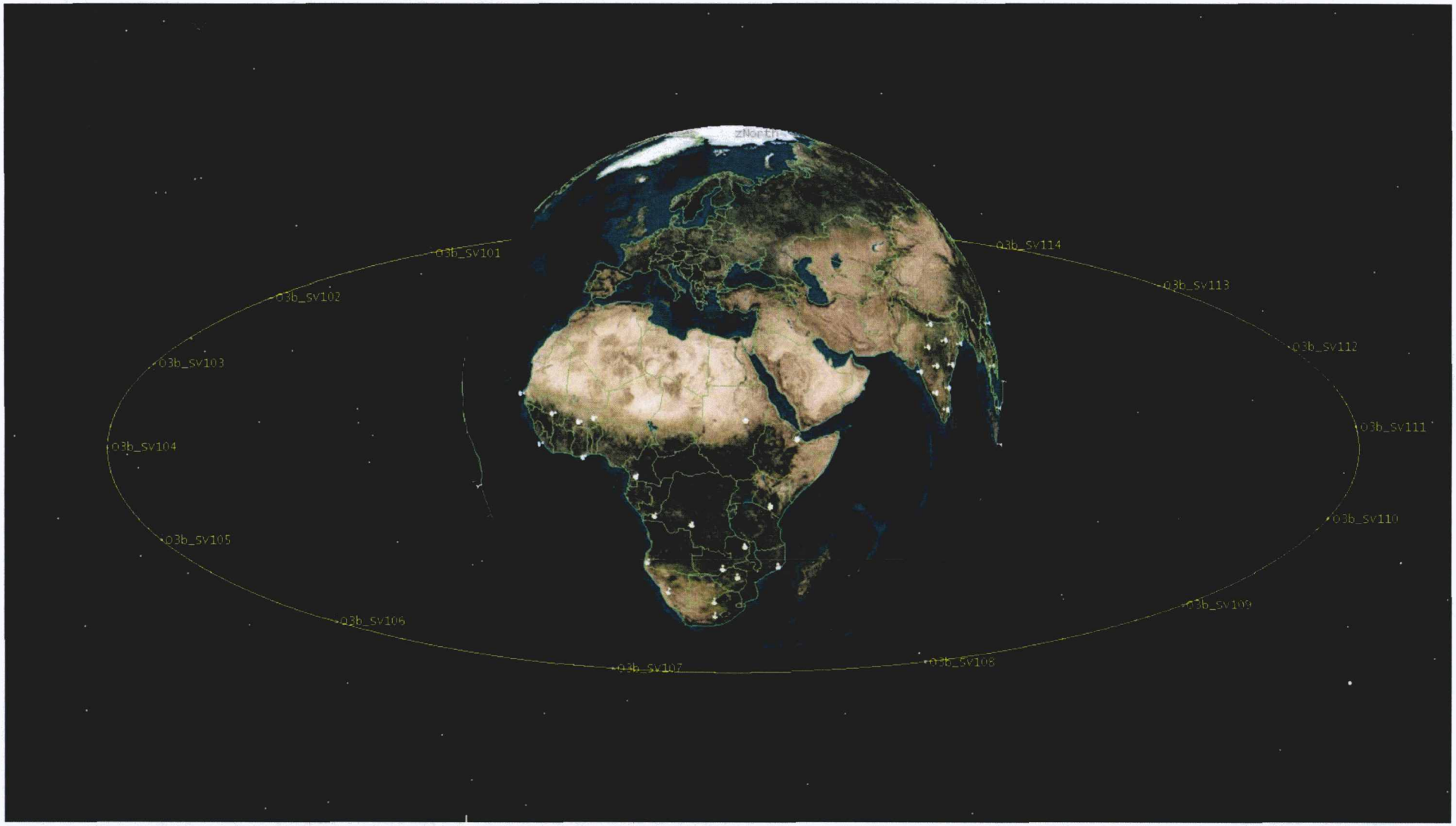
O3b: 8-Satellite Service Coverage



- 4.32 GHz of spectrum per satellite
- Links up to 1.2 Gbps
- Over 840 transponder equivalents (36 MHz) of available capacity in the 8-satellite constellation

SES

How will O3b work ?

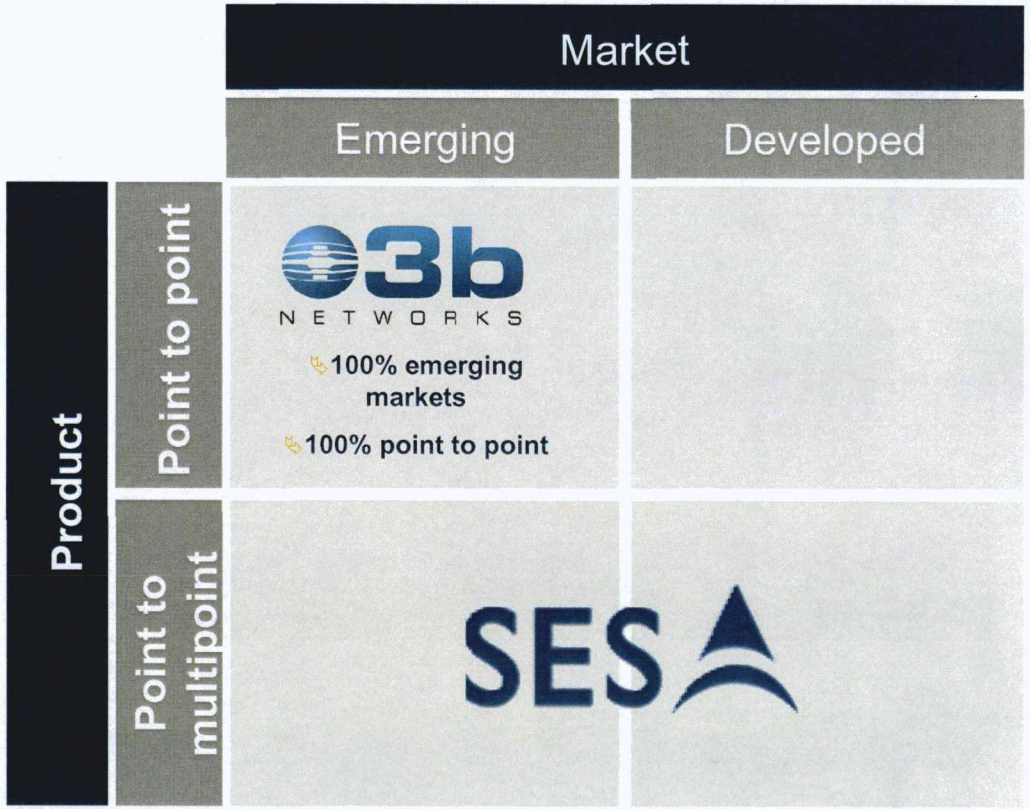


SES' Investment in O3b Networks

- In November 2009, SES invested 75 MUSD in O3b, and committed to provide in-kind services in 2010, 2011 and 2012
- SES has decided to increase its involvement in O3b Networks, jointly with existing and new investors, in the final round of the company financing
- This further investment, which will be of similar magnitude to the initial cash investment, will be contingent on full financing (debt and equity) being completed

Rationale of SES' Investment in O3b Networks

- By investing in O3b, SES will drive and support O3b's innovation, thus strengthening SES' core business
  - Technical expertise in the satellite and ground construction phase
  - Regulatory expertise for all the authorisation aspects
  - Established sales teams
  - Operational know-how
  - Strategic support
- O3b perfectly complements SES' portfolio in terms of:
  - Product offering
  - Targeted regions
  - Targeted customers
- By investing in O3b, SES expects to generate attractive financial returns
- By investing in O3b, SES is helping the development of less developed parts of the world



SES

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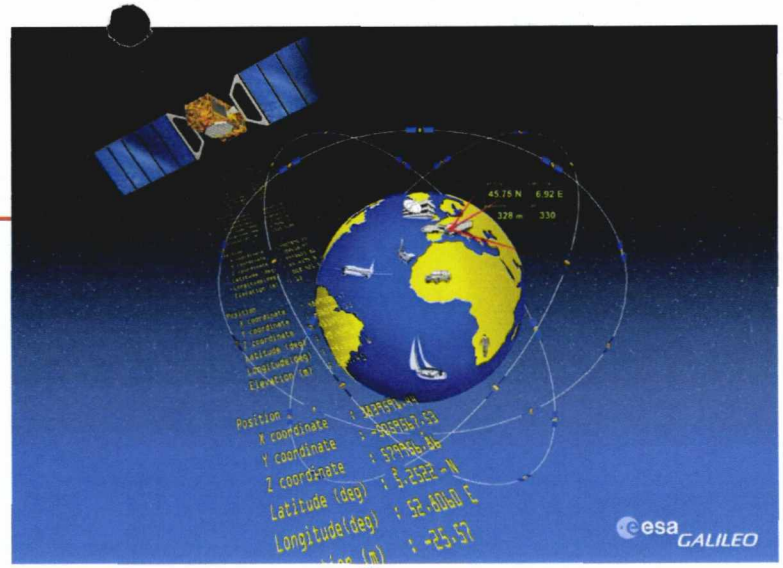
Agenda

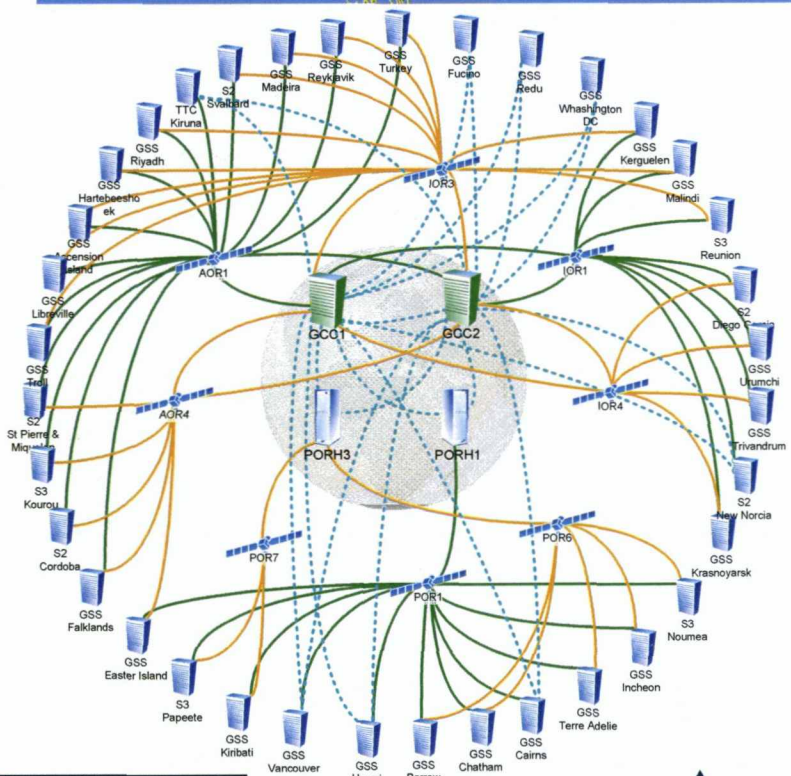
3. Governments & Institutions Segment

- **Contracts**
  - **GALILEO**
  - **EGNOS**
- R&D Programmes
  - Programmes with ESA
  - EDRS
- Defense
  - Luxembourg Defense Satcoms – Melusina
  - Dedicated Governmental Payloads

GALILEO - The EU Navigation Program



- Through its subsidiary SES ASTRA TechCom, SES has been selected to contribute to the various phases of the EU Navigation Program GALILEO (as part of Lot 6)
- In the first – In-Orbit Validation – Phase
  - Satellite control and measurement infrastructure (antenna systems)
  - First in-orbit verification and measurement (recurrent) services
- In the Full Deployment Phase
  - GALILEO fleet in-orbit verification and measurement (recurrent) services
  - Engineering Consultancy Services
- Additional infrastructure and services have been offered and are under discussion
  - Additional satellite control & measurement antenna systems
  - Full globe covering Data Collection/Distribution network (GDDN)



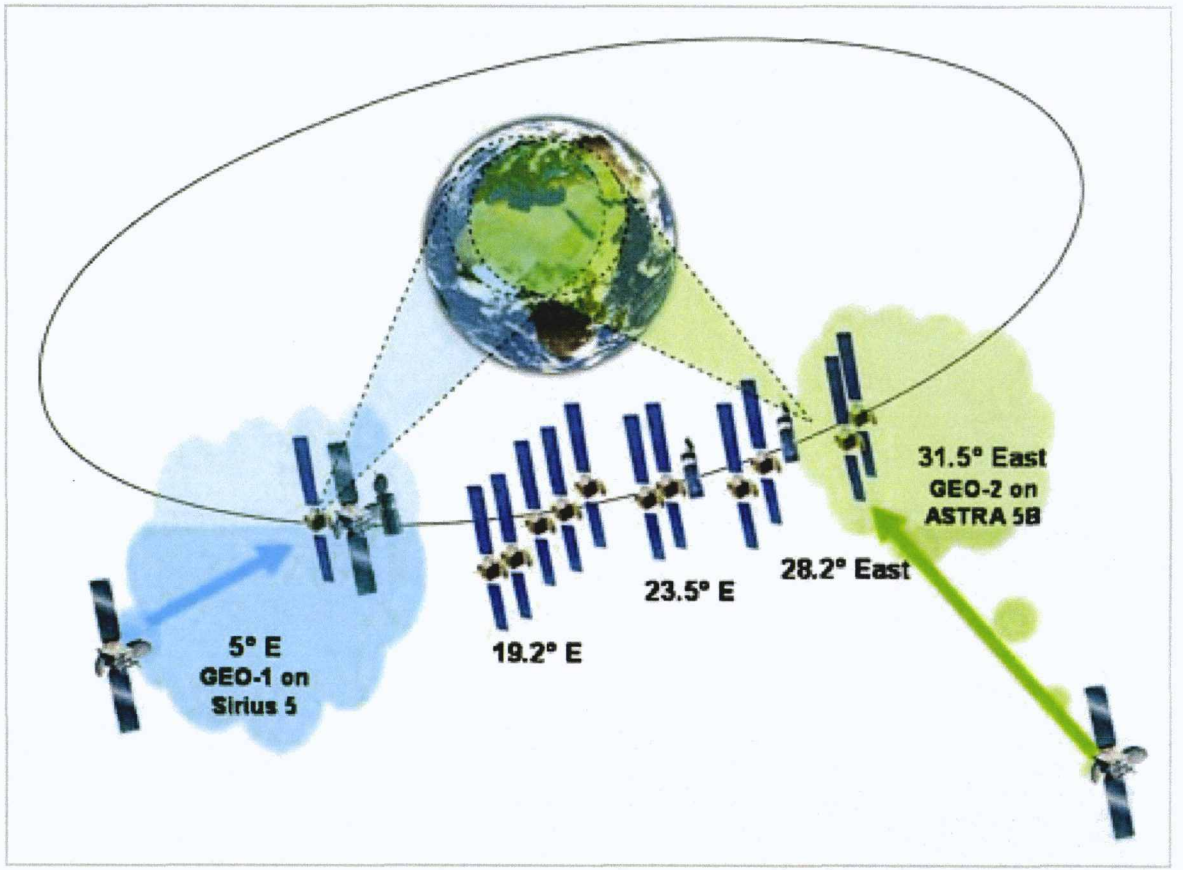
SES' position in GALILEO has grown to the status of 'Key Contributor'

SES

EGNOS – European Geostationary Navigation Overlay System

Customer
European Commission

Program
- SES awarded two separately tendered contracts for 2 EGNOS satellite payloads and related ground infrastructure
- First EGNOS payload hosted on the ASTRA 4B satellite (2011, 5°E), second payload hosted on the ASTRA 5B satellite (2013, 31.5°E)



Context
- EGNOS provides navigation services, supplementing the American GPS and the Russian-led GLONASS navigation systems
- It verifies, improves and reports on the reliability and accuracy of positioning signals in the European states area
- In the future, it will also support the European GALILEO navigation system

Beyond telecommunications, SES is playing an increasing role in navigation programs

Agenda

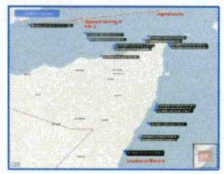
3. Governments & Institutions Segment

- Contracts
  - GALILEO
  - EGNOS
- **R&D Programmes**
  - **Programmes with ESA**
  - **EDRS**
- Defense
  - Luxembourg Defense Satcoms – Melusina
  - Dedicated Governmental Payloads

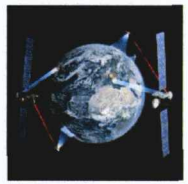
ESA/R&D

- Luxembourg is an ESA Member state since 2002 with an annual contribution of +/- 10 M€
- SES is working with ESA on the following topics:

  - Next Generation telecommunications systems
    - Broadband, Astra2Connect, BB-MED (Broadband for Mediterranean)



  - Maritime surveillance > Automatic Identification System (AIS)
    - Worldwide tracking of large maritime vessels



  - European Data Relay Satellite (EDRS)
    - In support to GMES (Global Monitoring for Environnement and Security)

  - Galileo Ground Segment (Lot 3) (Additional Galileo C-band antennas)

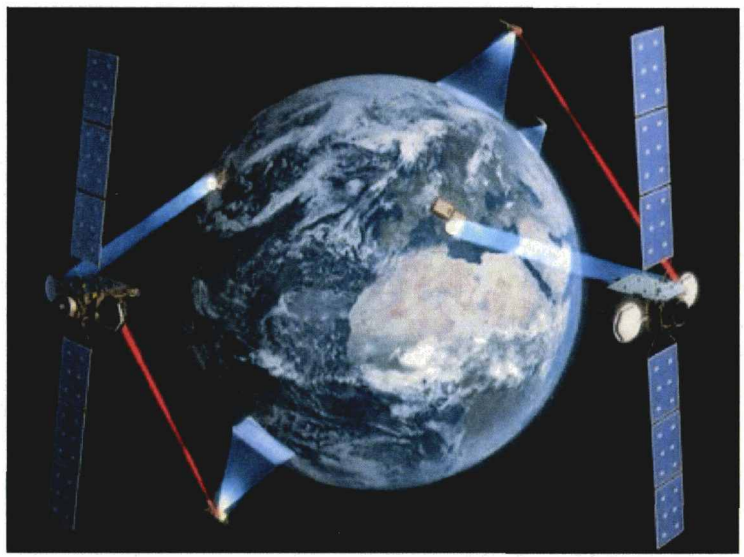
  - Civil Protection > GIANIUS Project

  - Africa development policies
    - Telemedicine project with EU and EIB

Beyond telecommunications, SES is playing an increasing role in Navigation and Earth Observation programs

EDRS – The ESA Data Relay Satellite Program

- The European Space Agency (ESA) launched a program for an European Data Relay Satellite System (EDRS)
- The SES teams of G&I & SES ASTRA TechCom are strategically positioned to be considered as provider for
  - Hosted Payload infrastructure and services
  - Ground control and operations infrastructures and services



"EDRS will boost European-developed technology and make use of a cutting-edge inter-satellite laser communication system as well as new data dissemination infrastructure on the ground. " (ESA)

SES is a trusted partner for one of the upcoming major ESA programs

SES

Agenda

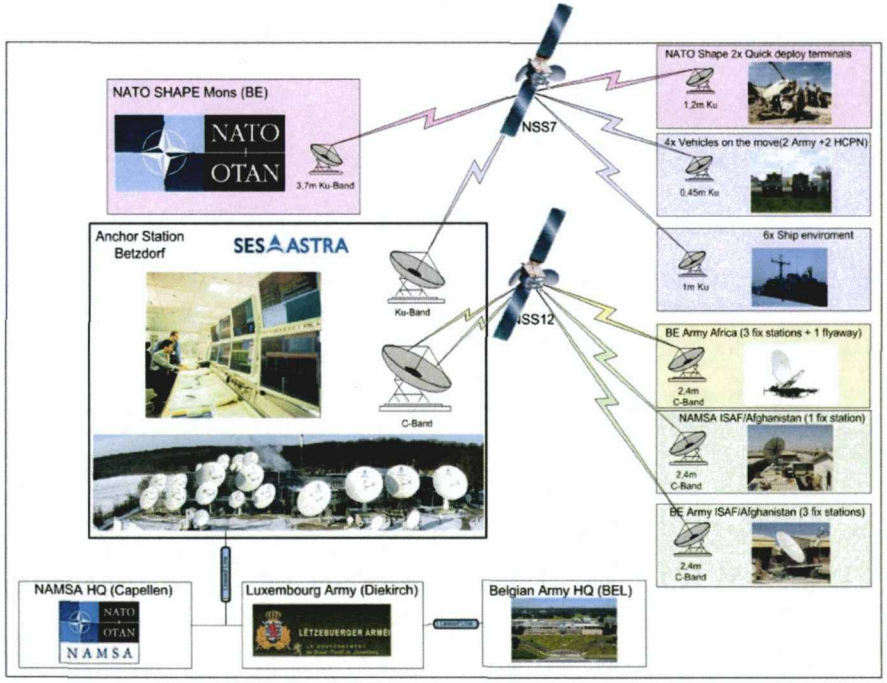
3. Governments & Institutions Segment

- Contracts
  - GALILEO
  - EGNOS
- R&D Programmes
  - Programmes with ESA
  - EDRS
- **Defense**
  - **Luxembourg Defense Satcoms – Melusina**
  - **Dedicated Governmental Payloads**

Luxembourg Defense Satcoms – Melusina Satellite Telecommunications Network

- As part of its cooperation efforts with partner member nations, the Luxembourg Direction de la Défense has implemented a secure satellite-based communications network (over Europe, the Middle East and Africa) to the benefit of NATO and Luxembourg allies

- Further potential resulting from this unique setup and competence recognition by third parties:



- Develop the Diekirch Army base as key terrestrial secure Army teleport for support to NATO and other partner nations

- Leverage on and further develop the unique Luxembourg industry competencies for NATO, the UN and for Luxembourg partner nations, … with local players like SES, Hitec, P&T Luxembourg, "Hosting Services" companies, ….

- Create and develop a specific satellite telecommunications competence within the Luxembourg Army

There is a unique opportunity to develop Luxembourg's recognised competencies in satcoms

Dedicated Governmental Payloads – SES project for Defense Communications

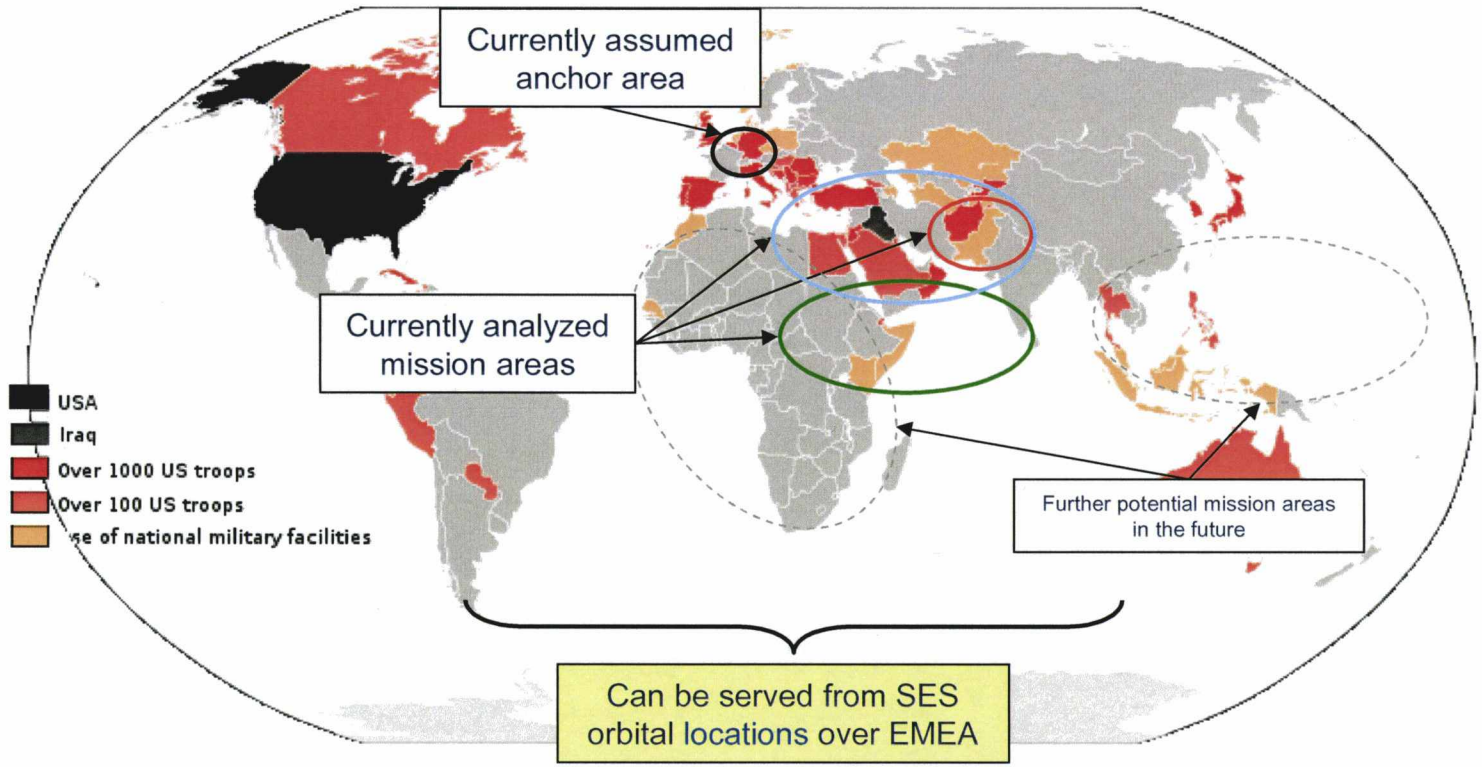
- Several nations are in discussions with SES regarding dedicated governmental satellite capacity
- Discussions include the provision of bundled capacity in commercial bands (Ku- and C-band) as well as in frequency bands used specifically for defense purposes (X- and military Ka-band)
  - Satellite capacity is required by partners in the frame of international NATO operations
  - SES is working on providing such dedicated governmental capacity, on the basis also of Luxembourg military frequency band filings, constituting a key asset for this project

- Luxembourg is uniquely positioned on a political level as it is regarded as a comparably neutral nation and without conflicting economic, military or political ambitions
- The support of such project of the Luxembourg Government – also as stable and reliable SES shareholder - is seen by foreign administrations as key asset for such SES offering

As Luxembourg has an excellent reputation of a 'neutral' state in Europe, it could take a facilitating role towards partner nations and international organisations

Dedicated Governmental Payloads – Expected Mission Areas

The military presence of allied partners in the world gives a good proxy for the key focus regions of European customers. Flexibility (steerability) of capacity deployment will be key



Flexibility in capacity deployment will be key in order to respond to constantly evolving telecommunication needs over mission areas

Agenda

1. SES today
2. O3b
3. Governments & Institutions Segment
4. Regulatory and Policy Matters
5. Corporate Social Responsibility
6. Betzdorf Site Development

EU Space policy

- ESA and EU have been working together since 2004 in order to share the governance and the financial burden of space programmes such as Galileo and GMES.
- Since 2010, Art 189 of the Treaty of Lisbon confers a shared competence to the Union in space policy:
  - Space is dealt with as an ordinary legislative procedure: Parliament and Council stand on an equal footing
  - European Union's growing involvement in space requires a re-evaluation of its relations with ESA and, in return, it requires a gradual evolution of ESA towards a "EU Agency".
  - Space includes security aspects since satellites are seen as critical infrastructures, which contribute to citizens' security and wellbeing. They must be protected against risks such as those posed by debris or solar radiation. The EU and ESA will develop a new programme called Space Situational Awareness programme.
  - On top of space and security, EU mandates also include Defense, Maritime Security, Civil Protection, Crisis management
- Currently space policy process is delayed due to a fundamental disagreement between Germany and France on the future governance of space matters. Germany requires that ESA remains as it is (mainly applying "industrial return" on projects), France insists that EU takes over (mainly aiming at having Arianespace paid by the EU).

Impact of EU Space Policy on SES

- Significant increase in business opportunities for SES related to European Institutional and government programmes (Galileo, EGNOS, GMES, SESAR, maritime surveillance) which requires institutional market positioning.
- As an answer to shortage of public funding, governments are interested by leasing existing commercial capacity and/or by hosted payloads instead of investing in dedicated satellites (see EGNOS payloads).
- Main EU programmes of immediate interest to SES:
  - EU2020 : Broadband Strategy, NGA recommendation*
  - Radio Spectrum Programme Policy (RSPP)

*Next Generation Access

EU Digital Agenda- Broadband Strategy

- In 2009 President Barroso launched the EU2020 Strategy which established targets for growth and jobs in the EU including the need for a digital agenda.
- To implement the EU2020 Strategy, Commissioner Nellie Kroes, DG Information Society (INFSO) in Spring 2010 launched the Digital Agenda defining the plan of action for the years to come.
- In September 2010, three documents were issued:
  - The Communication on Broadband Strategy,
  - a NGA recommendation
  - and the Radio Spectrum Policy Programme (RSPP) , *also a direct consequence of the Electronic Communications Framework (ECF) adopted in 2008.* –(see Radio spectrum slide)

Communication on Broadband Strategy and Next Generation Access

- SES supports the "Broadband for All by 2013" objective confirmed in the Digital Agenda (about 23% of households in rural areas are still without connection)
- SES questions the NGA broadband strategy objectives (*50% of European Households equipped with 100Mbps by 2020 / 100% of European Households equipped with 30 Megabits per second (Mbps):*
  - The EU should concentrate on services delivered rather than on speed
  - The costs of the fiber deployment will be extremely high (between 38 and 58 billion Euros to achieve 30 Mbps coverage for all by 2020 / between 181 and 268 billion Euros to achieve 100 Mbps for half of the households)
  - Single countries such as UK, France or Germany would need to spend around 5 billion EUR for 30 Mbps and 30 billion EUR for 100 Mbps – of which it is expected that around 70% of these are private investments
- SES pleads that an intelligent mix of technologies is the best approach to optimize future access networks, drive digital advancement and innovation and achieve these ambitious targets in a timely manner. Satellites have to play a major role in this mix.

Radio Spectrum Policy Programme (RSPP)

- Proposed decision for RSPP released in Sept 2010
- Linked to the telecoms Package where EU has to adopt a coordinated and strategic five (5) year EU spectrum policy.
- Purpose of the EU: encourage efficient spectrum management
- At stake for SES:
  - Support Commission's recognition of satellite role in 'Broadband For All'
  - Repeat the key role of ITU in spectrum allocation and of CEPT in spectrum regulation
  - Avoid that EU spectrum harmonization leads to fragmentation (e,g, Ka-Band)
  - Avoid harmonization of licensing conditions and procedures such as MSS 2Ghz (Solaris)

Solaris Mobile at a Glance

- Solaris Mobile, incorporated and based in Dublin, is a 50:50 Joint Venture formed in October 2006 between SES-Astra and Eutelsat Communications, two of the world's premier operators of fixed satellite systems
- In May 2009, Solaris Mobile was awarded the rights to 2x15 MHz of S-Band 2.0GHz spectrum to operate hybrid satellite and terrestrial networks in all 27 EU member states
  - This is the EU's first award of harmonised spectrum and will enable Solaris Mobile to offer pan-European service coverage to its customers for 18 years
- Solaris Mobile's core assets:

SPECTRUM	▲ 18 year authorisation to 2 X 15 MHz of spectrum directly adjacent to 3G UMTS Band 1 which can deliver a range of services over satellite and terrestrial wireless infrastructure
SATELLITE CAPACITY	▲ In-orbit satellite capacity specifically designed to operate in the 2.0 GHz band ▲ Satellite provides geographical coverage of 84% of EU 27 landmass
OPERATIONAL DEMONSTRATORS	▲ Multiple hybrid networks operational across Europe demonstrating the benefits of combining satellite and terrestrial infrastructure

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SES' social responsibility programme

- SES supports educational projects, reflecting the company's position as a leading global provider of satellite communications
  - *"The company believes it has a responsibility to contribute to the development of a communications-based society and a knowledge-based economy. Progress in this area should help develop more resilient and flexible economic structures, contribute to enhance social mobility and contribute to the emergence of more sustainable models of economic development."*

- SES supports:
  - Scholarships (ISU Strasbourg; IISC Isle of Man; SSPI Washington)
  - Uni.lu chair and cooperation programme with SnT
  - GIE Expo Shanghai 2010
  - Business Initiative 123-GO
  - Institut St Joseph, Betzdorf
  - Cultural initiatives (Musek am Syrdall, Edward Steichen Award)
  - Emergency communications in disaster situations (Haiti earthquake)

SES' action plan on climate change

- Satellite is a communications technology with a light footprint
  - Satellite's carbon emissions from operations are lower than those of terrestrial infrastructures
  - On average in 2009, SES emitted 0.15 g CO2e per Gbyte of data transmitted and received via SES satellites worldwide

- SES establishes a carbon footprint
  - 52,500 tons CO2e in 2009 worldwide from SES operations
  - Approx. 17,500 tons CO2e were Luxembourg-based emissions

- SES implements carbon reduction initiatives
  - Extected savings of 7,500 tons CO2e in 2010 in Betzdorf
  - Staff education campaign

Switch it off

SES Contribution to Luxembourg University

- SES and the University of Luxembourg signed a long term collaboration (2010-2015)
- Collaboration between SES and the Interdisciplinary Centre for Security, Reliability and Trust (SnT)
- Creation of an SES Chair in Space, Telecom and Media law affiliated to the faculty of Law, Economics and Finance
- SES will contribute 100,000 EUR in kind per year from 2010 to the SnT (a.o. through the supervision of industrial PhD students) and a total of 1,500,000 EUR in cash from 2011 to the SnT/the Faculty of Law, Economics and Finance
- Joint Benefits
  - Leverage contributions with project funding from EU framework programs, ESA, FNR, public-private-partnership, etc.
  - Ensure future availability of researchers with competence in "industry-relevant" areas
  - Cooperate with other universities with whom SES already cooperates (International Space University, Princeton University etc.)
- Research Priorities
  - Applications and Services
  - Satellite Hybrid Networks
  - Transmission and Reception Technologies
  - Legal and Regulatory Challenges

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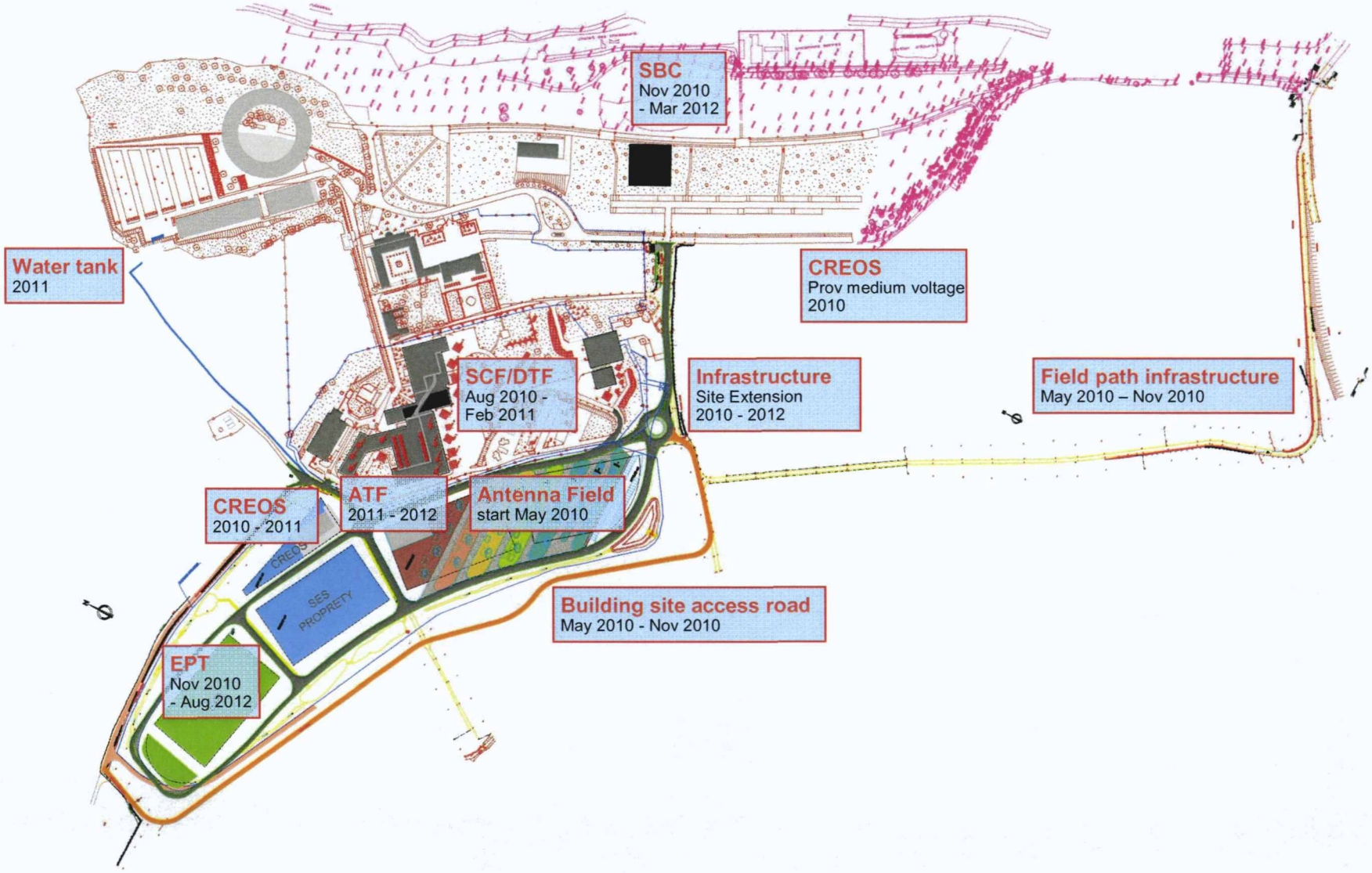
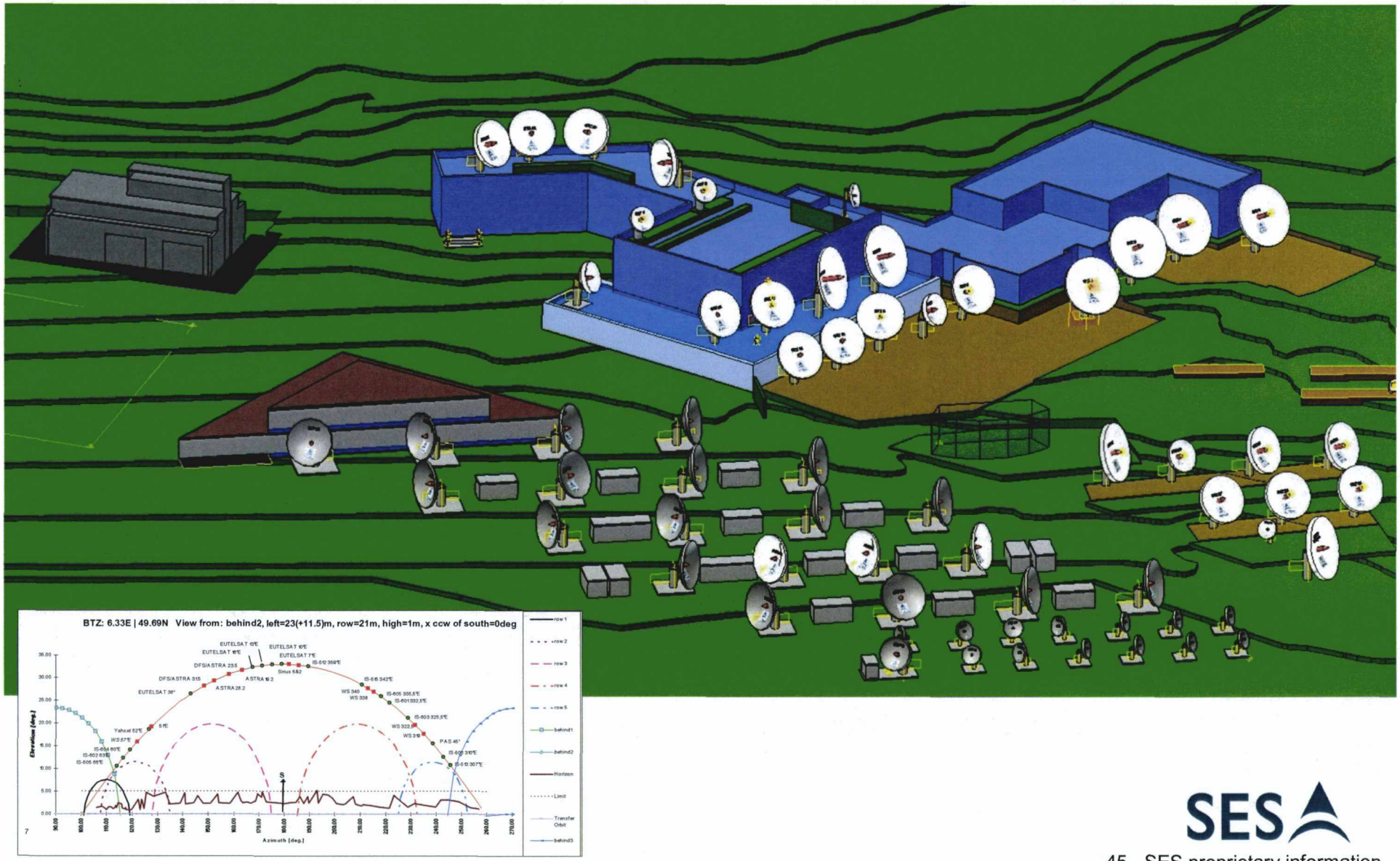
Betzdorf Site Development



New antenna field in BTZ and new technical facility (ATF)



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Thank you