

Geert Adams,

VP R&D Programs, Newtec

### **Geert Adams short Curriculum (Full Bio see below)**

- VP of R&D Programs at Newtec (co-operation with European Space Agency)
- Joined Newtec in 2001, prior to that active in product management at KPN & Unisource of Internet and telecommunication services

### **Newtec intro**

See Slides

### **Newtec's role in the broadband value chain**

Innovative player in the delivery of the ground segment systems (Hubs and terminals) for satellite broadband networks. (Sat3Play Brand – systems operated by a lot of major satellite operators (SES, Eutelsat, Avanti, ...)

### **Position points related to ground segment**

*Current state:*

Consumer ground equipment terminals are available and operational to support satellite broadband services up to 20Mbps at low cost and are DIY installations.

B2B ground equipment terminals are available and operational to support satellite broadband services up to 45 Mbps at reasonable cost

Also note that today with professional satellite equipment we can reach over 500 Mbps in point to point connections – this will be for sure in 2020 above the 1 to 2 Gbps barrier!

Given the progress satellite ground segment has made over the last 8 to 10 years, coming from expensive, large form factor VSAT terminals (see old slide below), difficult to install, we as ground segment are confident that the DAE 2020 of at least 30 Mbps is certainly achievable and can be exceeded to even higher speed >50 Mbps)

Also from a service point of view, all enablers are already in place and operational to have a smooth on-line E-commerce ordering and delivery of satellite broadband services.

Strong point of satellite broadband services is that there is almost no investment needed from the regions in infrastructure – In order to get the service up and running there is only the need of a CPE satellite broadband terminal at the consumer premises. These terminals are low cost and if needed can be partially upgraded to a terminal with higher capabilities by simply upgrading the Software or in case needed by a hardware replacement of the HW of the indoor part, which is common for CPE markets (e.g; who is still working with new SW on a PC of over 6 years old? (XP end of life, TV set for HD, ...)) On average a CPE type of market has a refresh rate of every three years.)

But the central Hub infrastructure (owned by the satellite or broadband operator) can be gradually upgraded to next set of throughput capabilities) without any infrastructure work for the regions...

In relation to Service quality:

Newtec has and is still investing a lot of R&D into adapting technologies that can cope optimal with both the one hand varying traffic mix and behaviour and at the other hand varying atmospheric conditions; Flex-ACM has become a widely adapted on proven technology

### **Technology progress towards 2020**

Ground segment sector is confident to get and go beyond the target of overall 30Mbps at consumer price level through following technology steps:

- Groundsegment adaptations to the latest upcoming satellite technologies
  - Wideband (250 MHz) => better statistical multiplexing
  - Dynamic adaptation between satellite payload and groundsegment even in open architectures (=> good for an open competitive market)
- Further integration of the building blocks of the modem (IDU) and Outdoor unit  
E.g. more integrated chip sets
- Auto pointing capabilities
- More efficient Modulation and Coding (E.g. DVB-S2X recently launched , HRC – Mx DMA Newtec )
- Higher layer optimisations of TCP/IP and traffic mix (acceleration, shaping , compression) based on new techniques (ERN, MTCP, ....)  
Note that the current consumer terminal of Newtec can already handle up to 22 Unicast plus on top > 10Mbps multicast traffic !
- Important also to mention is that the current terminals already support TV-reception (with add. set top box & broadband) with only one antenna & ODU. Knowing that predictions of traffic increase are highly linked to video / TV content – further optimisations on this part are on the roadmap.
- But Key to a good evolving roadmap is that there is the outlook and commitment to high volumes of terminals so that groundsegment supplier can invest with confidence in the required R&D!! (Linked to public investment)
- For the end-user and the region, the evolution from current satellite broadband services to higher grade/speed services will be an evolutive one meaning:
  - Most of the upgrades will come through over the air SW uploads/setting of capabilities
  - Some will require maybe replacement of the modem into a newer model (typical for CPE equipment)
  - In case there is a change of satellite, maybe a repointing (one-time) needs to be carried out

In background, the satellite (service) operators will do the required transition of ground segment Hub equipment and satellite capacity – but this will happen seamless for the end customer and regions

## **DAE targets reachable**

It is clear that without a satellite communications component, the DAE of 100% are not reachable. There is for sure the need for broadband satellite communication to get to the “real” full 100%!

Questions is if there is a real commitment for this 100% in Europe – or if it will be enough with “If we want to, we can do – but there is no market driven of those last X%”

For Satellite broadband communications and the related R&D it will be crucial that these last X% will be and need to be connected => this will create Europe wide a largely enough demand for sustainable commercial services ...

Note that even in a heavily “cabled” country as Belgium (copper, cable, fiber), the government and the ICT federated industries recognises that without satellite component there will be NO 100% coverage.

Bottomline, Satcom industry is confident and ready to get to the DAE target of 2020, but is Europe also ready to commit to it.

## **Bio Geert Adams, Newtec**

Geert Adams holds a civil engineering degree from the University of Ghent, Belgium and a postgraduate in business management from the Catholic University of Leuven. He started his career at Alcatel Bell, as a design engineer involved with the R&D of ATM networks, later he joined KPN Belgium (former Unisource Belgium) where as sales engineer manager his responsibilities covered network designs for Voice, Data and Internet Services for large customers. From 2001, he joined Newtec taking up the program management of Newtec's 2 Way-Sat DVB-RCS system; currently he is responsible for the research and development programs and the organisation of the competence centers within Newtec.

## Evolution Satellite Terminal Equipment

Equipment	Form Factor	Price (€)
Aramiska 2WaySat 2004	Requires Professional Installer 	1500
A2C/Sat3Play 2010	Self Install 	275

**FACTOR 5**

