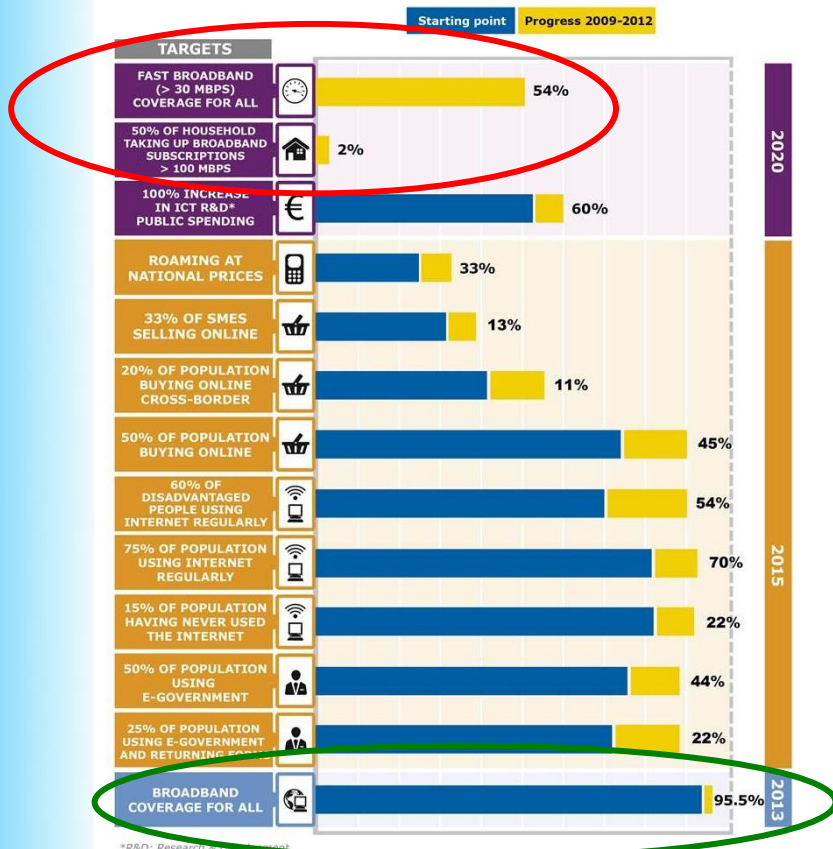# 4th Generation BroadBand

PhD h.c Henrik Almeida, Ericsson AB

Demand for broadband capacity is rapidly increasing

The EU Commission's Digital Agenda 2020

- > 30 MBPS for all…
  On its way!

- 50% of households > 100 mbps…
  Off track!

- Broadband coverage for all...
  Ok!

Available technologies:

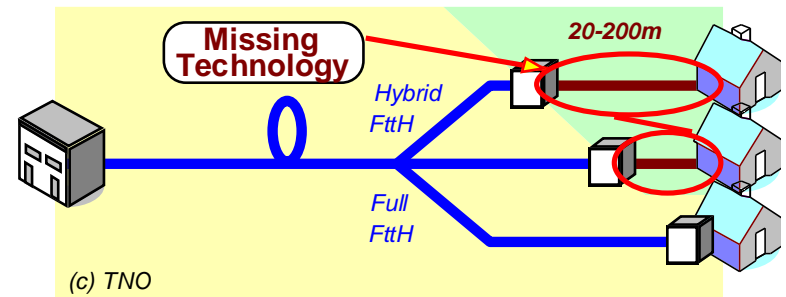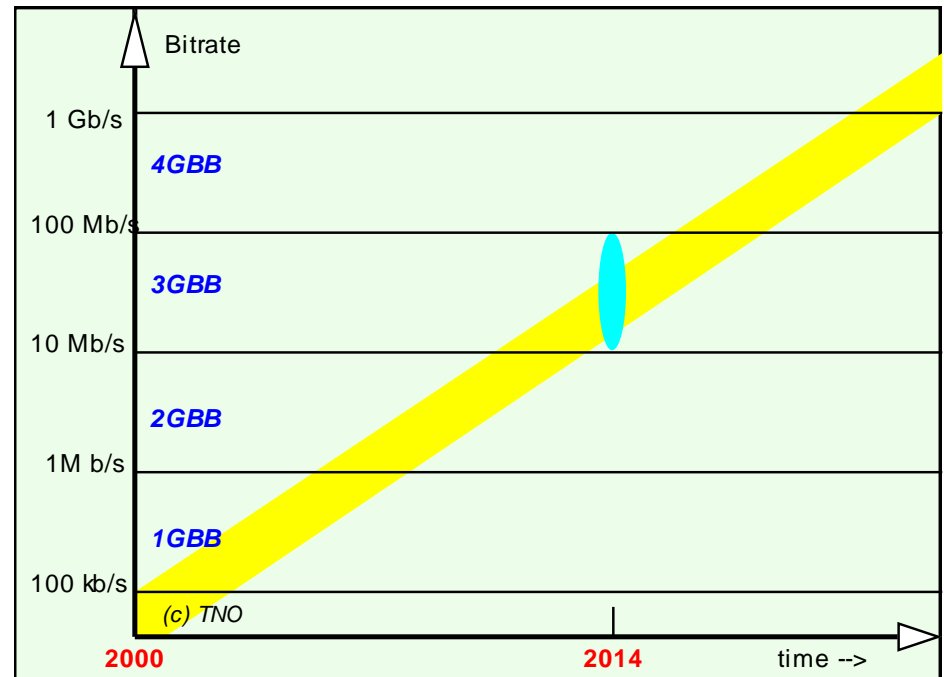- ADSL2, VDSL2 and FTTB/FTTH, including different PON solutions

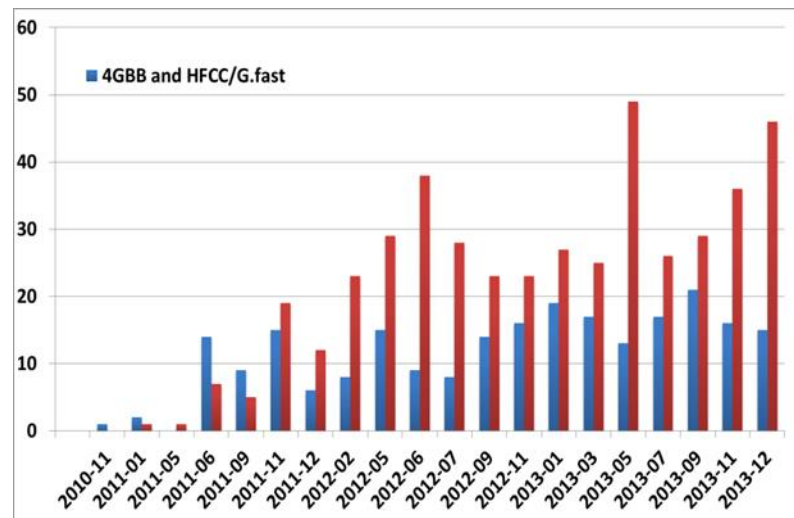## 4GBB main project goals:

What:

- To provide proof-of-concept for the ultimate DSL technology, which meets future capacity needs for fixed access and mobile backhaul.

How:

- A copper solution capable of Gigabit speeds from the "last distribution point"
- Study new cable models for > 200 MHz, spectrum allocation, transmission schemes, reverse powering, and initiate a new standard for this solution.

4GBB Innovation

- The "missing 4GBB technology" was studied and demonstrated
  - New cable models developed
  - New powering solutions proposed
  - New transmission schemes for gigabit speeds demonstrated
  - IPR, papers, book chapters, conference contributions and PhD theses
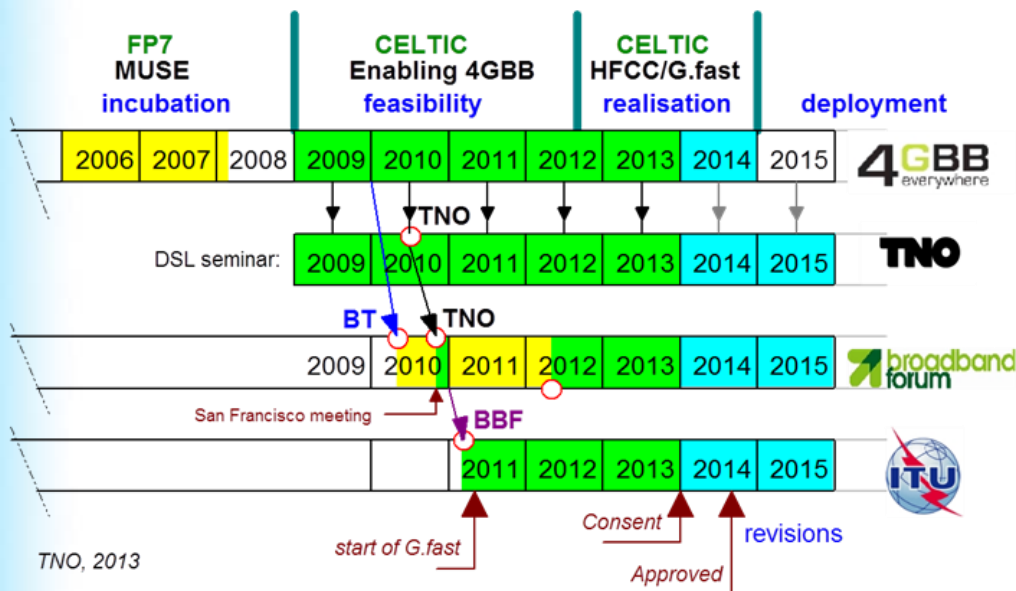 - A new standard initiated – G.fast
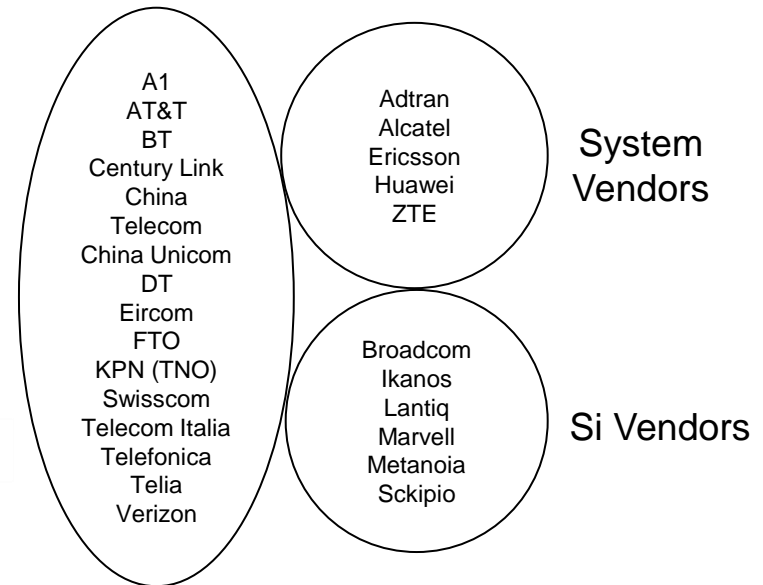

Total G.fast standard contributions – 684
■ 4GBB/HFCC contributions – 236
■ Non-4GBB/HFCC contributions – 448

- G.fast gets global industry support
    - Trials announced by several operators
    - New use cases identified: backhauling, dense areas, single line fiber extensions.
    - Detailed topology and techno-economics

Operators

A1
AT&T
BT
Century Link
China Telecom
China Unicom
DT
Eircom
FTO
KPN (TNO)
Swisscom
Telecom Italia
Telefonica
Telia
Verizon

Adtran
Alcatel
Ericsson
Huawei
ZTE

System Vendors

Broadcom
Ikanos
Lantiq
Marvell
Metanoia
Sckipio

Si Vendors

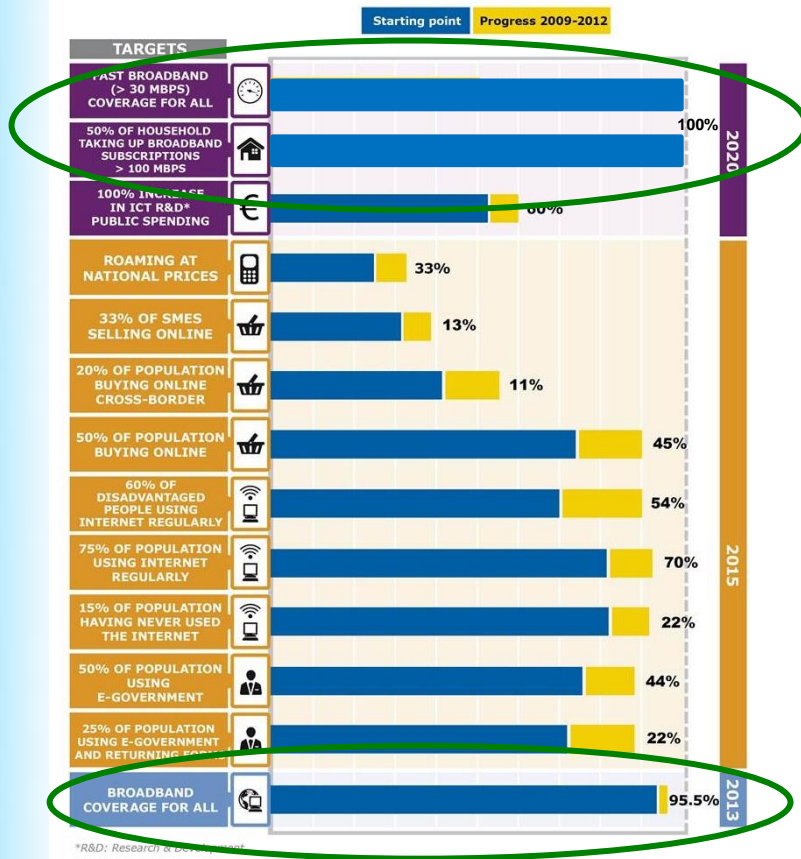Participants in Standardization

The Project Consortium

- Consortium members

- Partners participating part of the project:

The EU Commission's Digital Agenda 2020

- \> 30 MBPS for all…
  Ok!

- 50% of households > 100 mbps…
  Ok!

- Broadband coverage for all...
  Ok!

Thank You!

The Project Consortium

- British Telecom (UK)
- EUR AB (SE)
- France Telecom / Orange Labs (FR)
- Lund University (LTH) (SE)
- Marvell Hispania (ES)
- Telefónica I+D (ES)
- Telnet-RI (ES)
- TNO (NL)
- Türk Telekom (TR),
- Universidad Politecnica de Madrid (UPM) (ES)
- UpZide (SE)
- Ericsson AB (SE)

- Partners participating part of the project:
  Actelis Networks (IL), EPFL (SZ), Fundacion Tecnalia Research & Innovation (ES) SIDSA (ES), University of Edinburgh (UK)