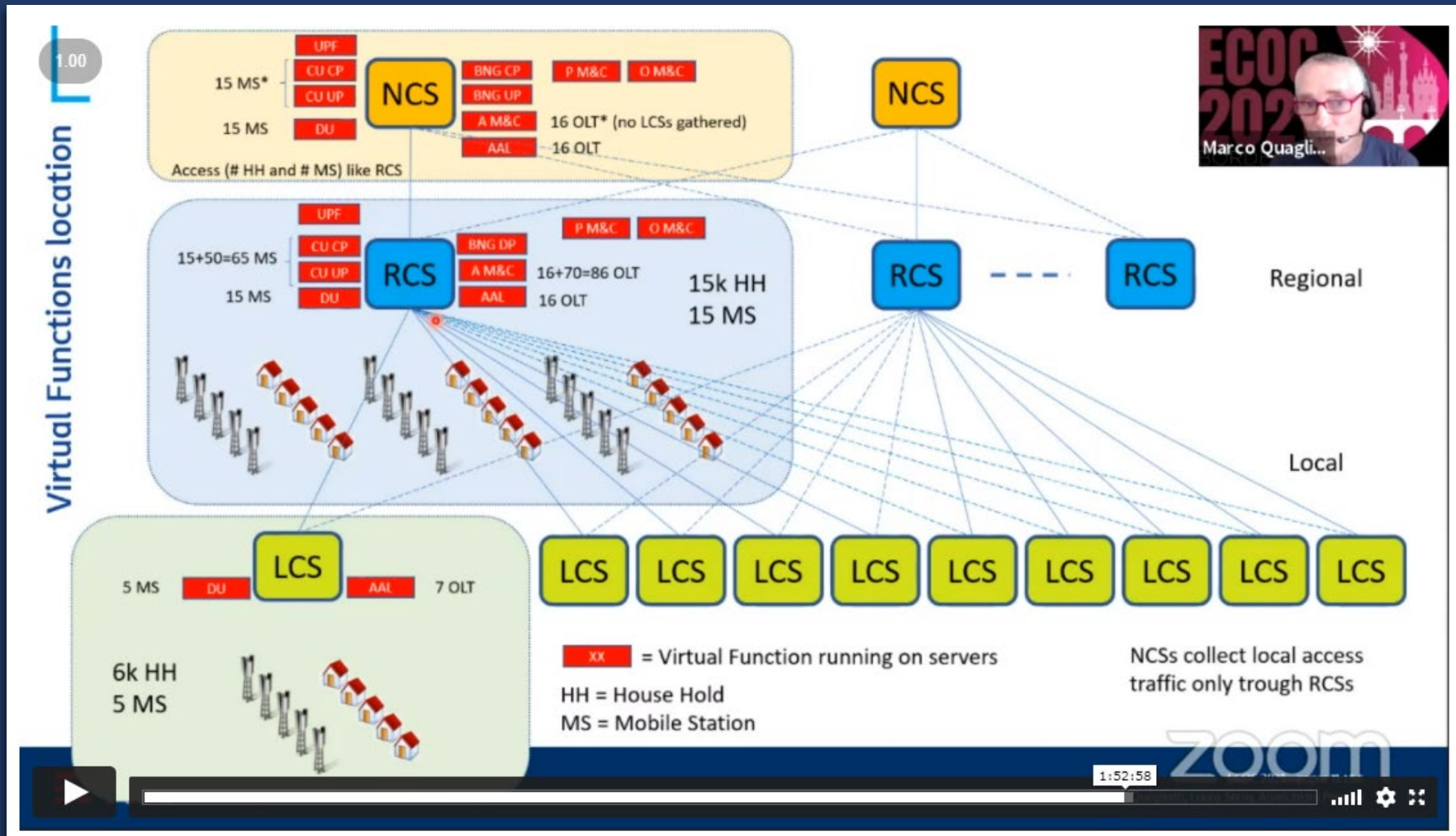

1.00
ECOC 2021
Room E
ECOC 2021
Marco Quagliotti
zoom
1:41:01


1.00
ECOC 2021
BORDEAUX
13-16 SEPTEMBER
Marco Quagli...
GRUPPO TIM
Disaggregation and Cloudification of Metropolitan Area Networks: impact on Architecture, Cost and Power Consumption
ECOC 2021
Bordeaux, 13-16 September 2021
Marco Quagliotti, Laura Serra, Annachiara Pagano
marco.quagliotti@telecomitalia.it
TIM
zoom
1:42:07


Virtual Functions location
1.00
UPF
CU CP
CU UP
DU
15 MS*
15 MS
NCS
BNG CP
BNG UP
A M&C
AAL
P M&C
O M&C
16 OLT* (no LCSs gathered)
16 OLT
Access (# HH and # MS) like RCS
NCS
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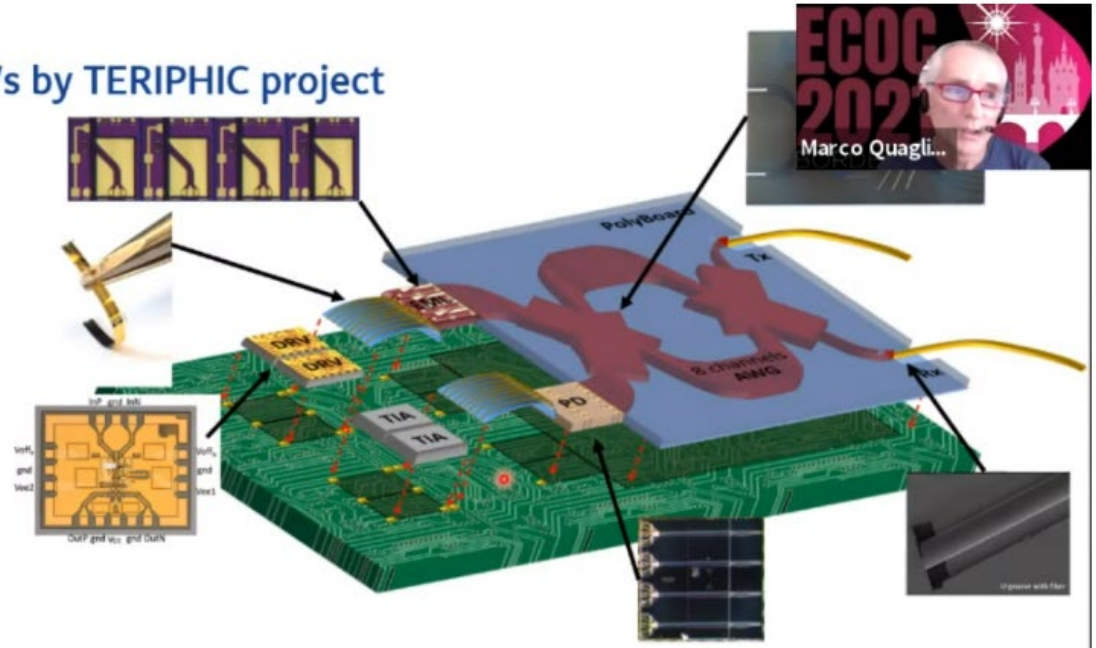
UPF
CU CP
CU UP
DU
15+50=65 MS
15 MS
RCS
BNG DP
A M&C
AAL
P M&C
O M&C
16+70=86 OLT
16 OLT
15k HH
15 MS
RCS
RCS
Regional
Local
5 MS
DU
LCS
AAL
7 OLT
6k HH
5 MS
LCS
LCS
LCS
LCS
LCS
LCS
LCS
LCS
LCS
XX = Virtual Function running on servers
HH = House Hold
MS = Mobile Station
NCSs collect local access traffic only trough RCSs
zoom
1:52:58

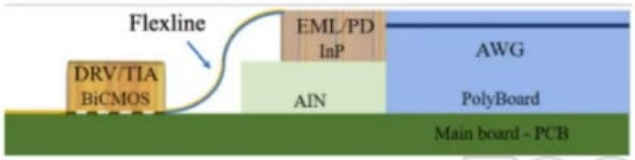
1.00

Transceivers at up to 1.6 Tb/s by TERIPHIC project

- Transceiver modules single mode, 2 to 10 km span budget with 50% reduction of power consumption
- 400G/800G/1.6T multilane PAM4, O-band, InP EMLs, 400 GHz grid
- MSA (QSFP-DD or OSFP) compatible devices for direct exploitation after project end (400G/800G). On Board Optics for higher rates (1.6T), more forward looking
- Assembly automation and module characterization processes for high-volume production



TERIPHIC



1:59:40

Conclusions

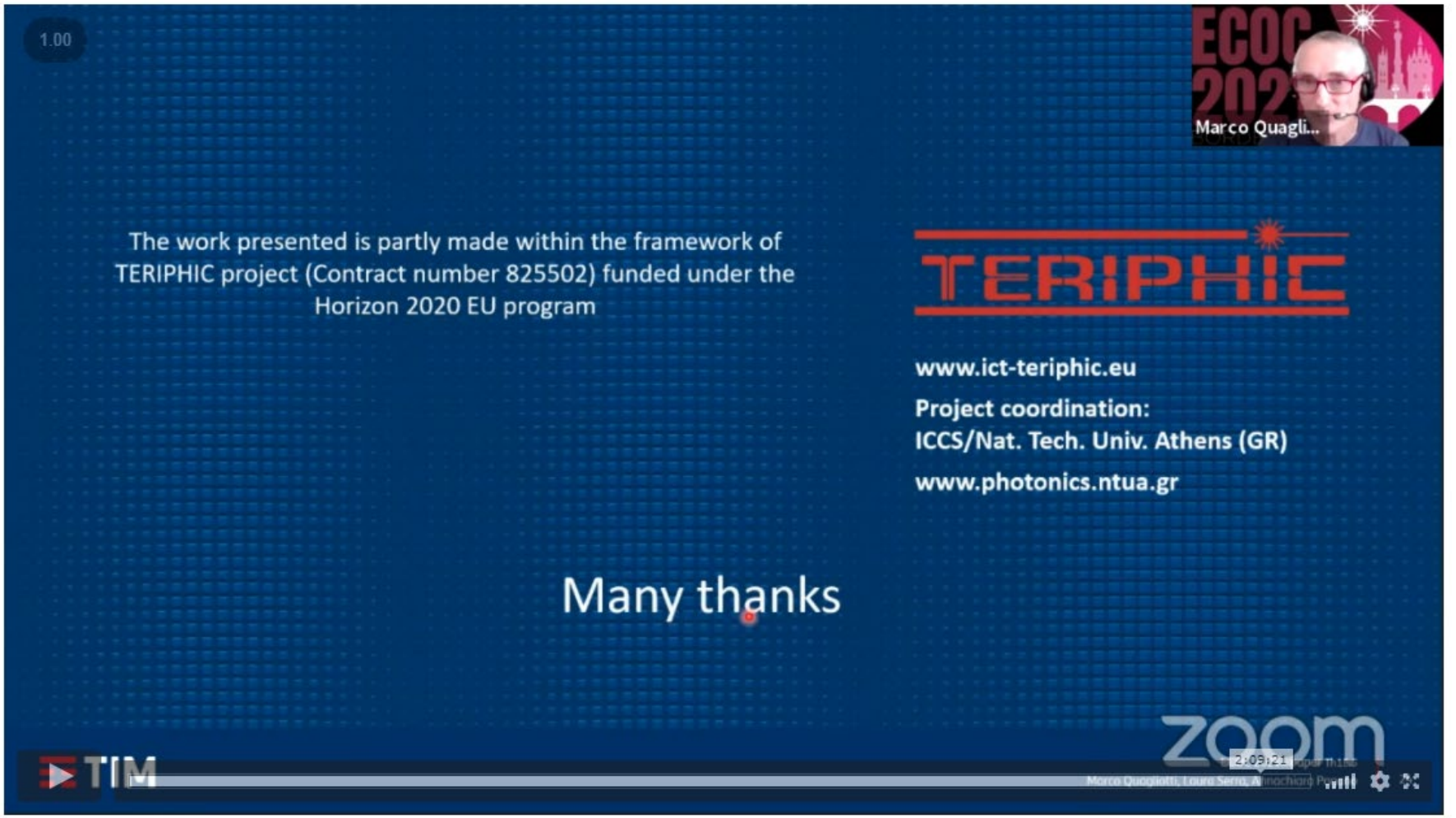
#01 The analysis made on cloudified and disaggregated MAN scenario shows that optics and DC together dominate the total capex (65% or higher)

#02 In medium term the cost share of the WDM pluggable grows due to the significant need for inter-site links at 400G and beyond

#03 The DC component, with the new decentralized architecture, consumes more than 70% of energy in all cloud site types

#04 Improvement of efficiency and reduction of cost per bit/s in servers, packet switches and transceivers are key enablers for cloudified MAN

#05 An example of such advancement is the 400G/800G/1.6T modules under development in EU TERIPHIC project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ECOC 202
Marco Quagli...
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TERIPHIC
www.ict-teriphic.eu
Project coordination:
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Many thanks
TIM
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2:09:21