Call for interest

IEEE 802.3 Ethernet Working Group

Form an IEEE 802.3 Study Group in support of

"Distinguished minimum latency traffic in a converged traffic environment"

IEEE 802.3 Plenary, CFI
November, 13, 2012
San Antonio, TX

CFI Panel Members

- **Chair & presenter:**
  - Ludwig Winkel — Siemens
- **Supporters and experts for the Q&A session:**
  - Thomas Hogenmüller — Bosch
  - Yong Kim — Broadcom
  - Oliver Kleineberg — Hirschmann/Belden
  - Dan Sexton — General Electric
  - Markus Jochim — General Motors

Supporters (32 persons from 22 entities)

Last	First	Company
Matheus	Kirsten	BMW
Hogenmueller	Thomas	Bosch
Mihalache	Razvan	Bosch
Diarra	Aboubacar	Bosch
Leurs	Ludwig	Bosch Rexroth
Grimwood	Mike	Broadcom
Teener	Michael J.	Broadcom
Yong	Kim	Broadcom
Zinner	Helge	Continental
Boiger	Christian	Deggendorf Univ
Schneele	Stefan	EADS
Jochim	Markus	General Motors
Osella	Massimo	General Motors
Sexton	Dan	General Electric
DeMaria	Tom	General Electric
Olsen	Dave	Harman
Carlson	Steven B.	High Speed Design, I.
Kleineberg	Oliver	Hirschman Belden

Last	First	Company
Stanton	Kevin	Intel
Thananya	Baldwin	Ixia
Pannell	Don	Marvell
Cummings	Rodney	National Instr.
Suermann	Thomas	NXP
Chou	Joseph	Realtek
Moldovansky	Anatoly	Rockwell
Goetz	Franz-J.	Siemens
Tretter	Albert	Siemens
Winkel	Ludwig	Siemens
Specht	Johannes	Univ.Essen
Iwaoka	Mitsuru	Yokogawa
Weibel	Hans	ZHAW
Müller	Thomas	ZHAW

Objectives for the meeting

- To measure the interest in starting a study group for support of
  Distinguished minimum latency traffic in a converged traffic environment.

- At this time, we **don't need to**
  - Fully explore the problem
  - Debate strengths and weaknesses of solutions
  - Choose any one solution
  - Create PAR or five criteria
  - Create a standard or specification

Agenda

- Recap *Joint IEEE 802.1 / 802.3 Technical Session*
- Recap *Market opportunity*
- Recap *Technical Viability*
- Q&A
- Straw Polls

Recap
Joint IEEE 802.1 / 802.3 Technical Session

see http://www.ieee802.org/3/minutes/jul12/0712_joint_802d1_802d3_close_report.pdf

From July 2012 Plenary,
San Diego, CA

Summary of Meeting

- Met on Wednesday July 18th from 8.30am to 10.30am
- Attendance: full room
- Agenda
  - Heard presentations
    - Johas-Teener, Winkel / Kleineberg, Thaler, Thompson, Diab
    - Email of presentation sent to 802.3 reflector
  - Discussion and straw polls on proposed CFI questions
    - Refined a question for a potential 802.3 Nov 2012 CFI question to launch an IEEE 802.3 SG
    - Results to follow

Straw Polls (Editorial Revision)

Options "Form an .3 SG.. for support of …"	All in Room	802.3: Voters or by Nov
A: distinguished minimum latency traffic in a converged traffic environment	**Y: 33 N: 4**	**Y: 9 N: 3**
B: minimum latency scheduled traffic in a heterogeneous traffic environment	Y: 8 N: 14	Y: 3 N: 8
C: scheduled traffic in a converged traffic environment	Y: 7 N: 20	Y: 3 N: 9
D: distinguished minimum latency time-sensitive traffic in a heterogeneous traffic environment	Y: 0 N: 23	Y: 1 N: 11
E: distinguished minimum latency traffic in a converged traffic environment with optimal bandwidth utilization	Y: 13 N: 12	Y: 0 N: 10

Recap
of market opportunity

From March 2012 Plenary,
Big Island, HI

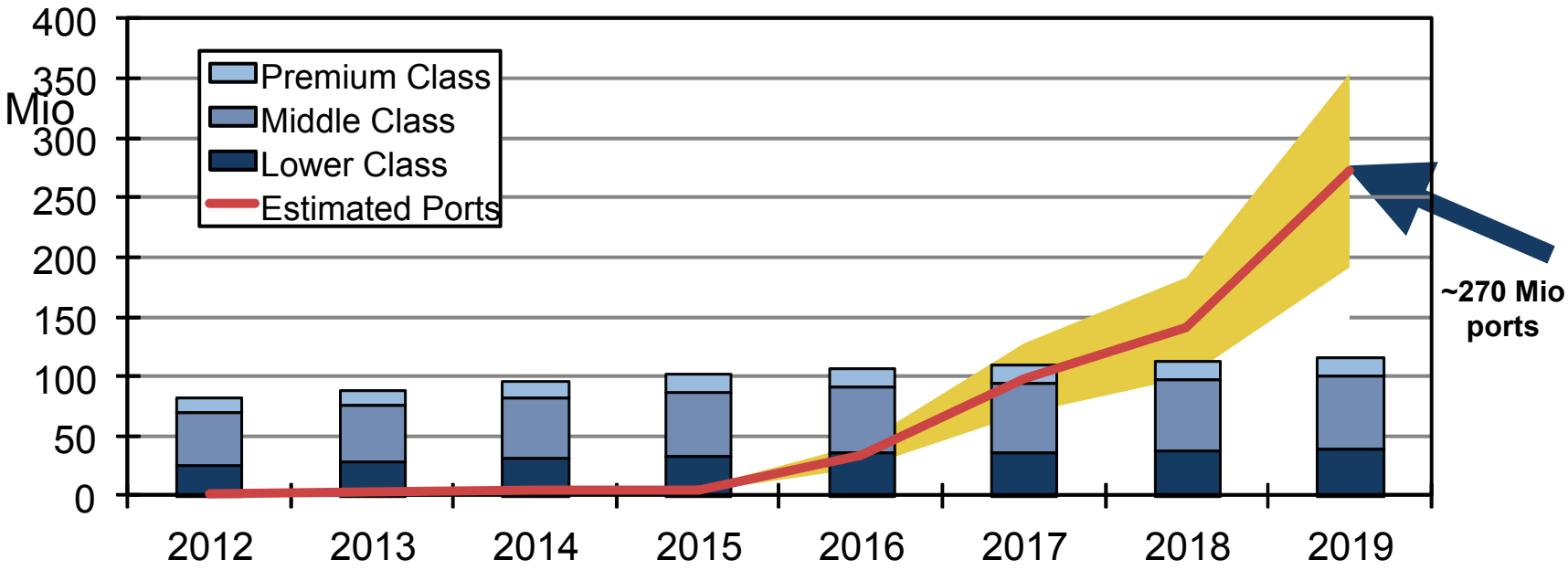
Automotive Ethernet Market

Introduction

- Ethernet use in automotive networks are now reality.
- Some mainstream in-car networks, e.g. CAN, Flexray, in use.

Forecast

- Strong desire and need for converged networks.
- Strong desire to interconnect mainstream in-car networks and emerging Ethernet networks.



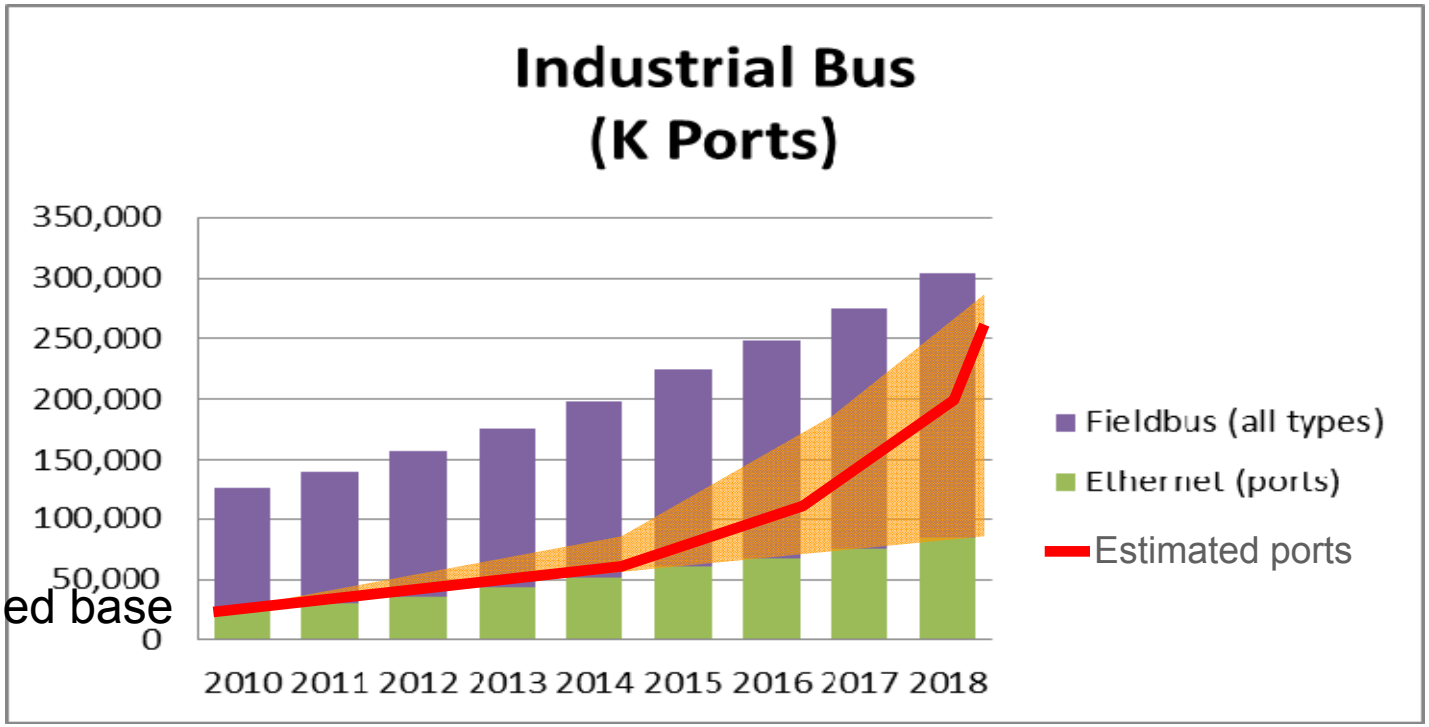
Industrial and Commercial Market

Introduction

- Ethernet use in industrial and commercial market is growing.
- About a dozen purposeful industrial protocols currently serve these networking needs

Forecast

- Strong desire and need for converged networks.
- Expect both conversion from fieldbus and growth of Ethernet over time.



Source: Contributions from Hirschmann, Siemens and Broadcom

Industrial and Commercial

Ethernet captures more and more Applications

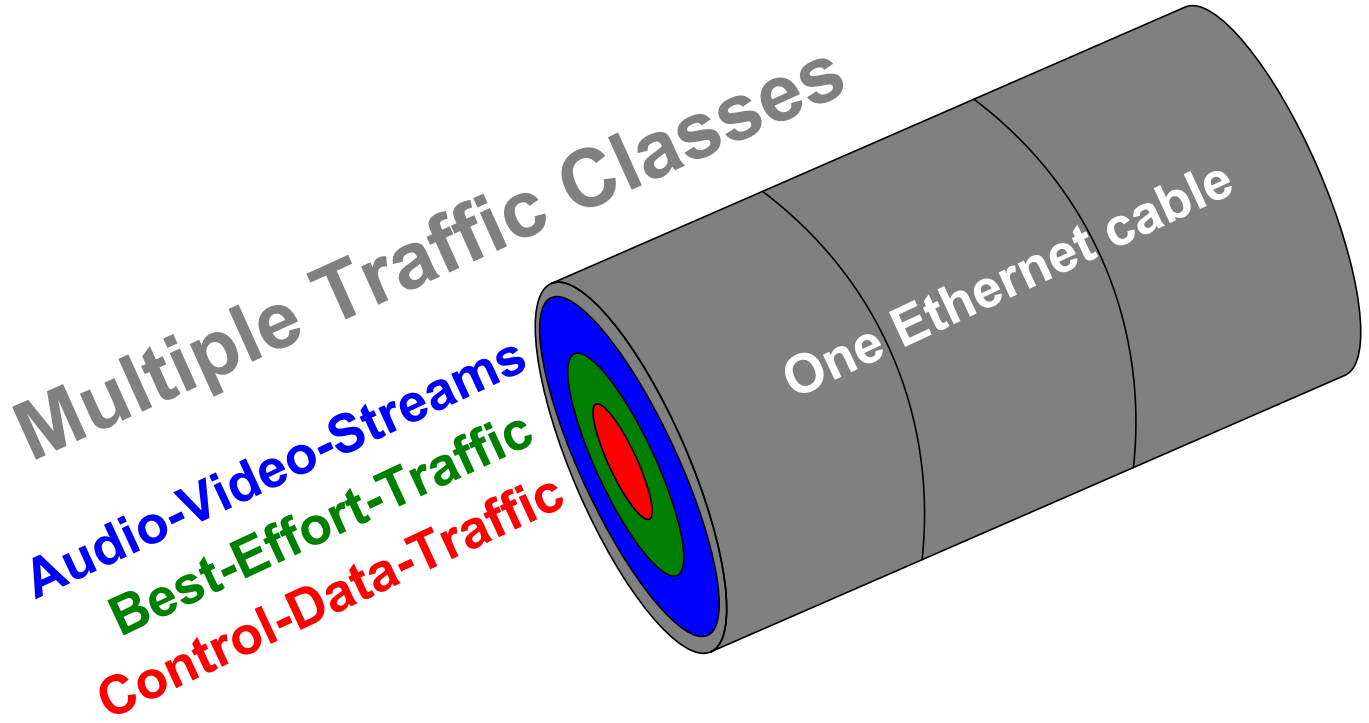
Traditional Markets

- Industrial Automation
  - Factory Automation
    - e.g. Material handling, Automotive Manufacturing, Transfer lines,
  - Process Automation
    - e.g. Oil, Gas, Chemical / Petrochemical, Food & Beverage
- Energy Automation
  - Power Generation
    - e.g. Fossil Power Plants, Wind Turbines
  - Power Transmission and Distribution
- Building Automation
  - Climate Control
  - Fire Safety

New Markets

- Avionics
  - Fly-by-Wire, Passenger Experience, etc.
- Railway Systems
  - Train Control
  - Railway Traffic Management Systems
  - etc.
- Medical
  - Patient Imaging,
  - Patient Management

Traffic Classes @ Converged traffic environment



Only <u>one</u> network with guaranteed bandwidth and guaranteed minimum latency for

Control-Data-Traffic and Audio-Video-Streams

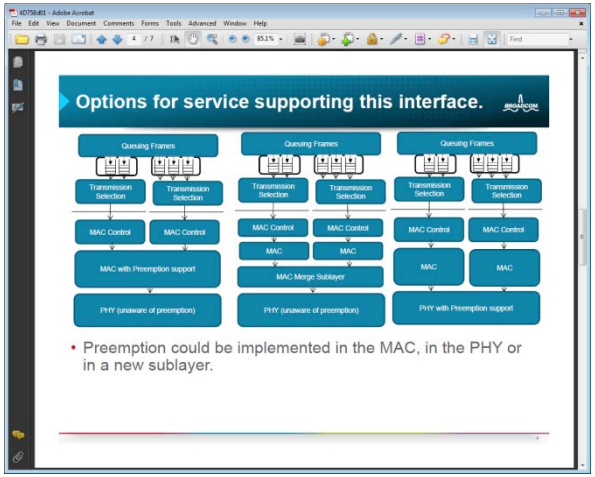
while also providing capacity for Best-Effort-Traffic

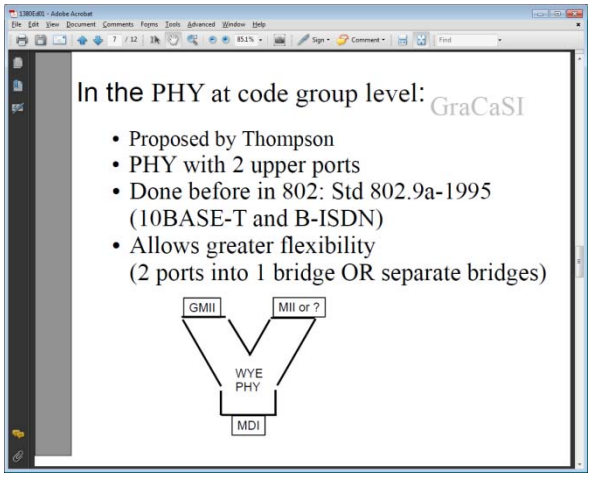
Recap
of technical viability

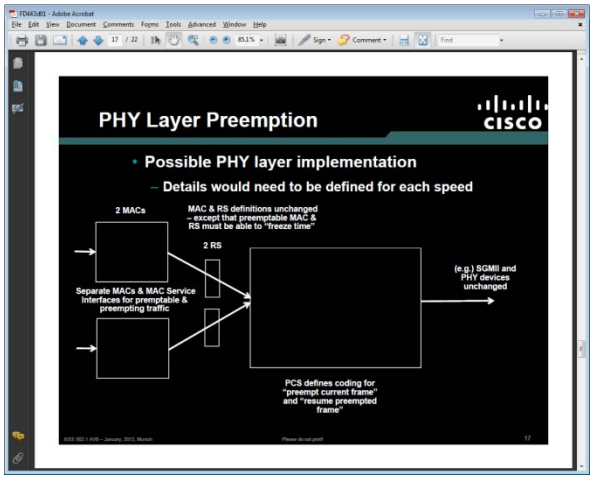
From July 2012 Plenary,
San Diego, CA

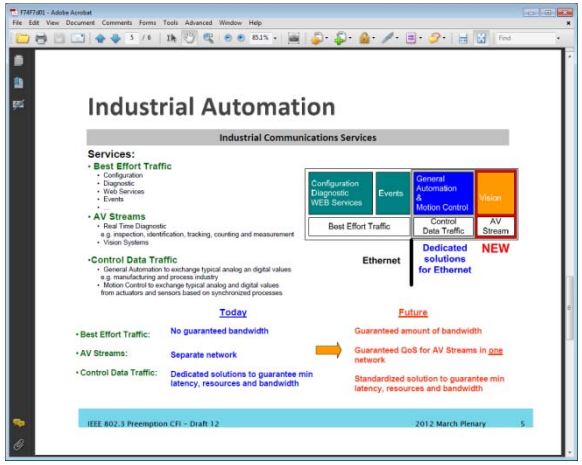
Recap of technical viability

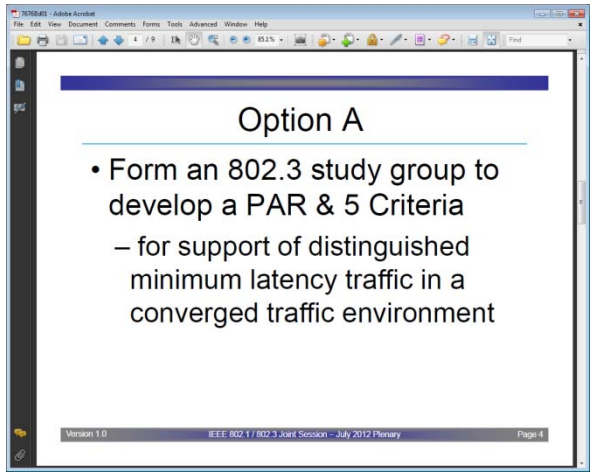
- Possible solutions, most were shown in various presentations during the joint .1/.3 sessions, showing that it is viable.

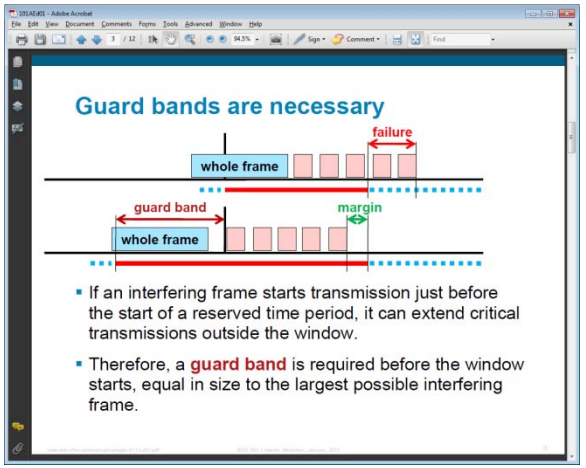












Questions and Discussion

Distinguished minimum latency traffic in a converged traffic environment

- Should an 802.3 Study Group be formed for

Distinguished minimum latency traffic in a converged traffic environment?

People in the Room	Dot 3 Voters Only
Y: ____	Y: ____
N: ____	N: ____
A: ____	A: ____

Straw Polls

- __ Number of people in the room
- __ Individuals who would attend and contribute to a

Distinguished minimum latency traffic in a converged traffic environment Study Group

- __ Companies that support participation in a

Distinguished minimum latency traffic in a converged traffic environment Study Group

Thank you!

Call For Interest

Distinguished minimum latency traffic in a converged traffic environment

For Plenary November, 2012
San Antonio, TX

CFI Request Text

- Title: Distinguished minimum latency traffic in a converged traffic environment.
- This CFI request is the result of the joint technical plenary between IEEE 802.3 and IEEE 802.1 in July 2012 (see http://www.ieee802.org/3/minutes/jul12/0712_joint_802d1_802d3_close_report.pdf#page=5). There is a need for support of distinguished minimum latency traffic in a converged traffic environment. This would help address the requirements in markets such as industrial and automotive control network, where control data is time-sensitive and often requires minimum latency.
- This call for interest will assess the interest within IEEE 802.3 to form a form an IEEE 802.3 study group to develop a PAR & 5 Criteria for support of distinguished minimum latency traffic in a converged traffic environment