CWTe 2010 Fall Research Retreat

October 26th 2010
Welcome!

Everybody!

- Strategic Partners
- Project Partners
- Research Partners
- 3TU Colleagues
- Students
- Industry
- CWTe Members
- Research Institutes
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>09:00</td>
<td>--Registration &amp; coffee</td>
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<td>Welcome and introduction</td>
<td>Prof. Peter Baltus (TU/e, dir CWTe),</td>
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<td>+ message Prof. Ton Backx (TU/e, dean EE)</td>
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<td>René Penning de Vries (CTO NXP), Dr. Hans Rijns (NXP)</td>
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Welcome

by prof. dr. ir. A.C.P.M. Backx
Dean of the Department of Electrical Engineering
CWTe:
Creating the Wireless Future!

Peter Baltus
CWTe Research Retreat, October 26th 2010
Outline

• Wireless…
• Trends
• Predicting or Creating the Future?
• CWTe
• Research programs
• Today
• Your part
Wireless...

• More expensive...
• Less reliable...
• Less secure...
• Less power efficient...

But:
Wireless Technology Trends

“Ubiquitous”: Invisible & cheap

“Shared Channel”: Robust & Efficient

Complexity
Wireless Industry Trends

Business models:

From: “local monopoly”

To: “Global Competition”

From: “Controllable Future”

To: “Dynamic Markets”

Planning & ROI:

Time →

From: “Basic Research”

To: “Innovation”

Industrial Research:

Fundamental

Applied Res.

Industry

Gap

Business

Development

Innovation

Similar to SME

To: “Innovation”

To: “Dynamic Markets”

To: “Global Competition”
Predicting or Creating the Future?

- Increasing complexity
- Loss of control

(Atempts at) Predictions

**Alternative model:**
- Build shared vision of desirable future
- Cooperation between industry & academia to create
- E.g.: “Moore’s Law”, “Edholm’s Law” etc.

**Approach:**
- Use roadmaps to build shared vision, shared projects
- “Fill the gap” between university research & industry:
  Research centers for multi-disciplinary technology
Strategy/organisation of EE

Themes
Multidisc. techn.
Disciplinary fundamental research

Electrical Engineering

Conn. World
Care & Cure
Sm. & Sust.S.
COBRA
CWTe
PCTC

OED
ECO
EM
MSM
ES
SPS
CS
EPE
EPS
Connected World: CWTe

Multidisc. techn.

Themes

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Started May 1st 2007

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Started May 1st 2007
Filling the Gap: CWTe
Wireless Technologies: Application Areas

- High speed comm.
- Wireless sensor & control
- Wireless Observation
Today

• Morning session: Keynotes on
  • THz imaging (TNO & Philips)
  • Industry/academia cooperation on wireless (NXP)

• Afternoon session: Technical presentations on
  • Low-power co-existence (Erwin Janssen)
  • ULP autonomous wireless sensors (Peng Zhang)
  • Efficiency improvement in wireless (Rob Mestrom)
  • Wireless Wire (Xia Li)

• Closing session
• Drinks
• Your vision on wireless applications & tech in 2030
• Forms available in 1st break (11:00) on tables
• Return forms during last break (14:30)

What new wireless application would you want to see in 2030?
What technology would we need for that?

Your name: _____________________________    Your organization/company: __________________________________
Your idea: ________________________________________________________________________________________
_________________________________________________________________________________________________
_________________________________________________________________________________________________
_________________________________________________________________________________________________

First prize:

Rules:

Presentations
Best 3 visions
At closing session

Selection by Jury:
• 1 person industry
• 1 person university
• 1 chair (me)

All registered Participants qualify
Except jury
Start of the regular program:

Enjoy the Program!
Key note: THz imaging and spectroscopy: the next wireless wave

Prof. Giampiero Gerini (TNO, TU/e),
Dr. Marion Matters (Philips)
Break & Posters
Until 11:30
Key note: Better together in a new semiconductor era

Dr. Hans Rijns
Dr. René Penning de Vries
NXP Semiconductors
Lunch & Posters
Until 13:30
Enabling low power, multi-radio coexistence

Ir. Erwin Janssen (TU/e)
Ultra-low power wireless design of autonomous sensor networks

Peng Zhang, MSc (TU/e)
Break & Posters
Until 14:50
Efficiency improvements in wireless networks for future European communication needs

Dr. Rob Mestrom (TU/e)
Closing Session

Peter Baltus
Received xx submissions

Jury selected 3 “best” visions on
- Wireless applications
- Technology

Not taking author/affiliation into account

Authors are invited to present their ideas
And receive their prize

Starting with 3rd prize:
CWTe Quest 3rd prize

• Author:

• Description:
CWTe Quest 2nd prize

• Author:

• Description:
CWTe Quest first prize

• Author:

• Description:
Acknowledgements

• Special thanks to
  • Margot van den Heuvel
  • Pauline van Gelder-Hoen
  • Jan Haagh

• Regular thanks to:
  • Presenters
  • CWTe partners, researchers & staff
  • All attendees

We hope you enjoyed this first CWTe research retreat.

See you next time!