Communication Systems 11 (ComSys 11)

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Technical Introduction
Organizational Issues

CSG
Communication Systems Group

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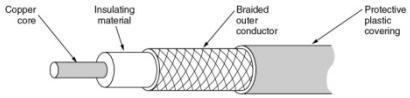
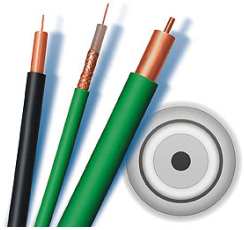
Communication Systems

- End-systems (hosts)
  - Desktops, laptops, PDAs, mobile phones, ...



- Links
  - Copper, coax, fiber optics, radio, wireless, ...



- Intermediate systems (routers)
  - Repeaters, hubs, switches, routers, gateways, ...

- Protocols, Services, Architectures
  - Data transmission, management, operations, security, ...

→ Complex infrastructures (mainly on control plane)

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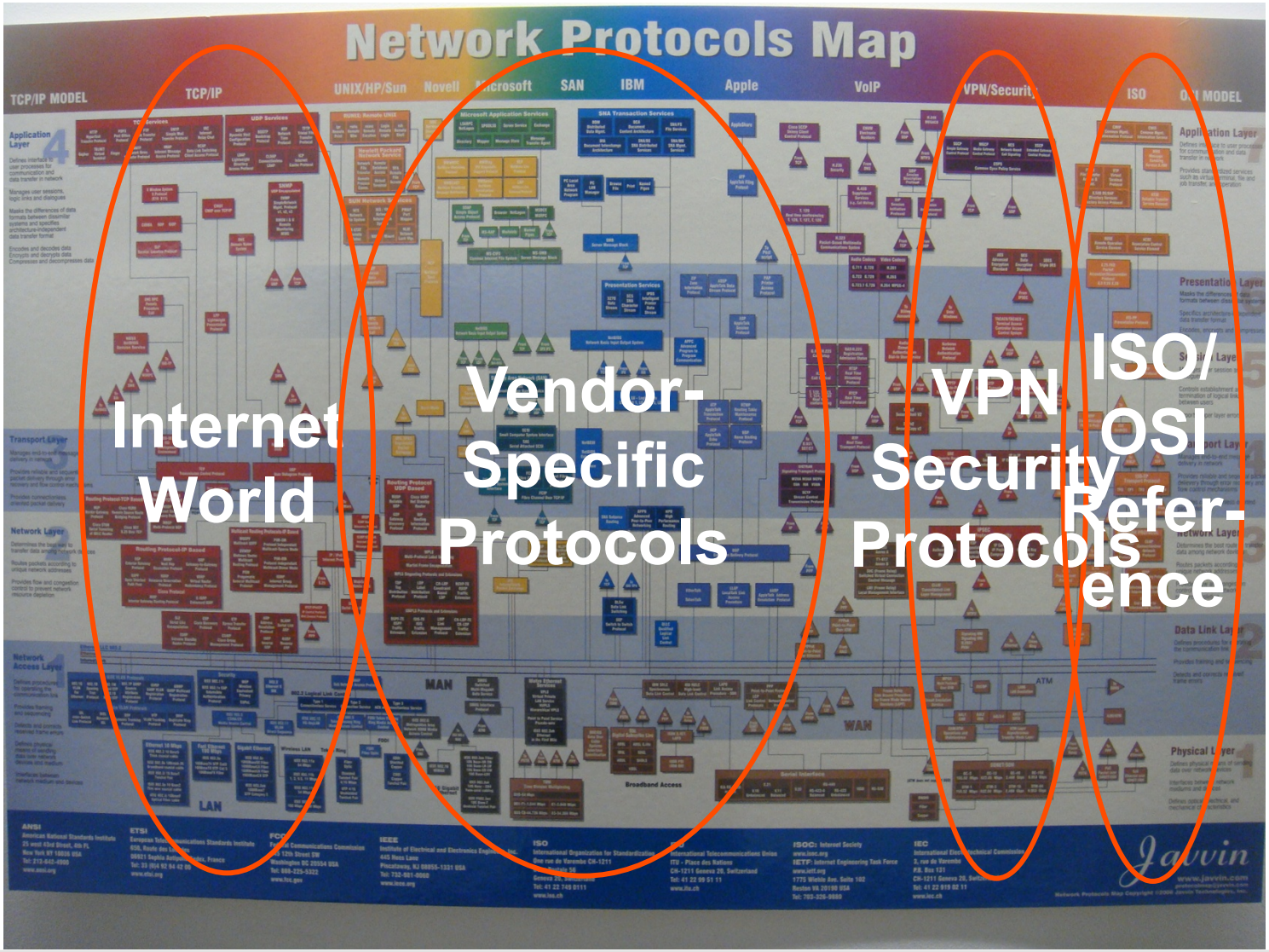
Protocols (sic!)



Range of Technologies and Applications

- Wireless/wired communications and effects
  - LoRaWAN, mmWave
  - 5th Generation Wireless Communications (5G)
- Flexible networking control and Internet-of-Things (IoT)
  - SDN-based (Software-defined Networking) and NFV (Network Function Virtualization)
  - IoT Communication Protocols
  - Message Queuing Protocols
  - Overlay Networks and Blockchains
- Dedicated application domains
  - Crypto currencies
  - Smart Contracts

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Seminar Organization

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Basics of the ComSys Seminar

- Introduction today: Thursday, February 22, 2018
  - Bin 2.A.10/06, 12.15 – 13.45 hours.
- First seminar talk: (depending on selections today)
  - Thursday March 22, 2018
  - Room ***2.A.06/10, 12.15 – 13.45*** hours.
- Electronic Information:
  - News and possible updates
  - http://www.csg.uzh.ch/teaching/fs18/comsys/

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Organization

- Target for 1 student or a group of 2 students:
  - Self-performed, but supervised reading/material investigation.
- Process:
  - Read.
  - Search, think, and classify.
  - Write: Finally min. 10/16 pages (LaTeX template to be used).
  - Identification of open issues and hand-in of pre-version and, optional hand-in of presentation to identified supervisor.
  - Integration of changes and corrections.
  - Preparation of a scientific talk: 30-45 minutes.
  - Reply to questions and open issues.
  - Moderation of a discussion (statements): 30-45 min.

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Seminar Outcomes

- How to read topical research papers?
- How to find related material?
- How to determine the problem analysis of existing material?
- How to structure a technical summary?
- How to prepare a written, scientific report?
- How to set-up a scientific presentation?
- How to prepare for a moderated, technical discussion?

- Plagiarism is not acceptable! Leads to seminar‘s failure. Correct scientific citation is the path to follow.

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Written Report Content

- Write a self-contained abstract (don‘t summarize), assume that it is an executive abstract.
- Set-up an introduction into the area ***and*** problem.
- Optionally define basic terms and key issues.
- Structure the main chapters according to a top-down ***or*** bottom-up approach, don‘t mix and match ☺
- Use figures and tables in a balanced manner and always talk about those in the text!
- Always include a summary at the final end and, optionally, cover conclusions.

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Written Report Template

- Written reports have to follow a common style.
  - LaTeX determines the *only* seminar's choice.
  - Figures in .jpg and .eps.
  - Title, Author, Abstract on page one and only on page one.
  - Table of content on page two.
  - First section and further sections starting from page three.
  - Bibliographic references and (optional) list of abbreviations as well as glossary at the final end.

  - All relevant information and details are available at the URL: http://www.csg.uzh.ch/teaching/fs18/comsys/ (→ Calendar)

Important Dates — Mandatory

- One week before each talk:
  - Slides plus bullets, (draft) Table-of-Content (ToC)
- March 15, 2018:
  - Draft report (for supervisor feedback): draft ToC, plans, bullets
- April 26, 2018:
  - Final written report (for final feedback)
- May 31, 2018:
  - Completely finalized versions of written report (with LaTeX source files) and of presentation slides (PPT)
- The 3 page handout information are mandatory and key for complying with all formal seminar requirements!

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Seminar Rating Guidelines

- Initial draft and ToC preparation
- Write final report (structure and tool)
- Initial and final presentation slides
- 30-45 min presentation (depending on group size)
- Moderation of 30-45 min discussion including 3 topics
- Showing significant effort to achieve seminar‘s goals
- Compliance with all deadlines
  - Especially wrt to last deadline and compilable LaTeX sources
- Active participation in all discussions!
- Presence at all minus 1 seminar dates
- Language: English

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ComSys Topics

- Investigation of *three broader areas* of the communication system's domain:
  - Communication Systems Use
    - SLAs and Smart Contracts
    - Network Neutrality
    - Emerging Wireless Communication Systems in 5G
  - Internet-of-Things (IoT) and Flexible Networking
    - Interconnecting Things, IoT Protocol Standard
    - IoT and Blockchains, NFV and Blockchains
  - Blockchains
    - Requirements and Challenges for Blockchain Governance
    - Overview and Use Cases of Blockchain Interoperability

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Overview of Topics and Dates

- Talk 1: **"Requirements and Challenges for Blockchain Governance"**
  Lucas Pelloni, Erion Sula March 22, 2018 Supervisor: Bruno Rodrigues
- Talk 2**: "SLAs and Smart Contracts: A Feasibility Study"**
  NN March 29, 2018 Supervisor: Eder Scheid
- Talk 3: **"Network Neutrality Laws: The Swiss Case Study"**
  Cynthia Aludogbu, Kate Gadola April 12, 2018 Supervisor: Eder Scheid
- Talk 4: **"Interconnecting Things Using the Constrained Application Protocol"**
  NN April 19, 2018 Supervisor: Corinna Schmitt
- Talk 5: **"Advanced Message Queuing Protocol as a Communication Protocol Standard for IoT"**
  Maciej Lebiedz April 26, 2018 Supervisor: Corinna Schmitt
- Talk 6: **"Introduction to IoT Use Cases With an Evaluation of Integration Possibilities with Blockchains"**
  Anna Götz, Cyrill Halter May 3, 2018 Supervisor: Sina Rafati
- Talk 7: **"An Overview of Emerging Wireless Communication Systems in 5G"**
  Bhargav Jatinkumar Bhatt May 17, 2018 Supervisor: Sina Rafati
- Talk 8: **"Overview and Use Cases of Blockchain Interoperability"**
  Vasileios Koukoutsas, Te Tan May 24, 2018 Supervisor: Bruno Rodrigues
- Talk 9: **"Commonalities of Network Function Virtualization, Blockchains, and Smart Contracts"**
  Claude Müller May 31, 2018 Supervisor: Eder Scheid

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Your Next Steps

- Today:
  - Fill-in your contact details into the group‘s sheet
  - Collect the hand-our of your topic description
- Tomorrow:
  - Contact your supervisor by e-mail, negotiate a first meeting
- Following days and weeks:
  - Read, discuss, meet with supervisor, prepare
  - Check seminar‘s Web site regularly for updated infos
- March 15, 2018: Draft report, draft ToC, plans, bullets
- April 26, 2018: Final written report (for final feedback)
- May 31, 2018: Complete versions of report & slides
- Do register yourself in the “Modulbuchungs-Tool”

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Have fun in the upcoming spring term,
and a good start!

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Written Report Hints (1)

- Avoid the following mistakes:
  - Include full title and talk X in your cover sheet
  - Include figures with a relative path and without suffix
  - Always reference in your text „as shown in Figure X …“
  - Adapt the size of figures to the maximum template margins
  - Figures show a caption (below the figure)
  - Tables show a title (on top of the table)
  - All paragraphs need to separated by an empty line, do not use „\\“ or „\newline“, since a sentence is normally not a new paragraph!
  - Do not use „\newpage“ by any means
  - Check all labels and references, do not use them twice

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Written Report Hints (2)

- Avoid the following mistakes:
  - Check LaTeX warnings
  - Do not change the use of bibliographic references, use styles as provided
  - Do not write references in separate lines, they form a single paragraph
  - Include all references into the bibliographic reference list!
  - Write your abstract and make it fit onto the first page, do not have longer texts here, do not change the abstract's style
  - Do not change margins at all
  - Do not change formatting and layouting by any means

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