

# Project Group

## Trusted Communication Module

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# Motivation

- **SPAM:**

Anyone can send you an email and disseminate your email address.

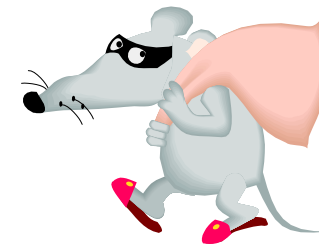


- **DoS attacks:**

Anyone who has your IP address can send you a message and freely disseminate your IP address.

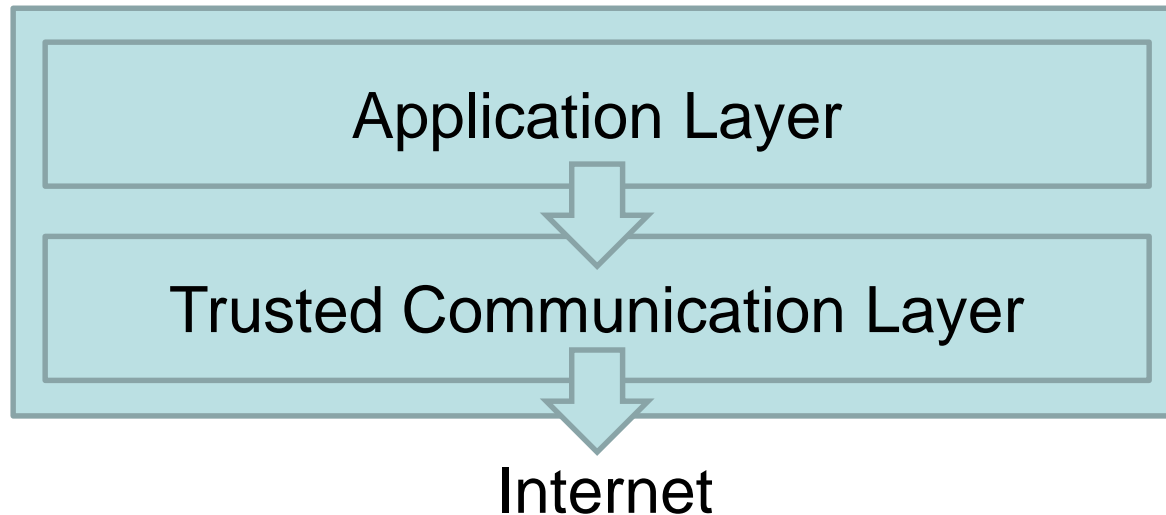
- **Viruses:**

Once a virus is in your system, it has access to all information in it.



# Motivation

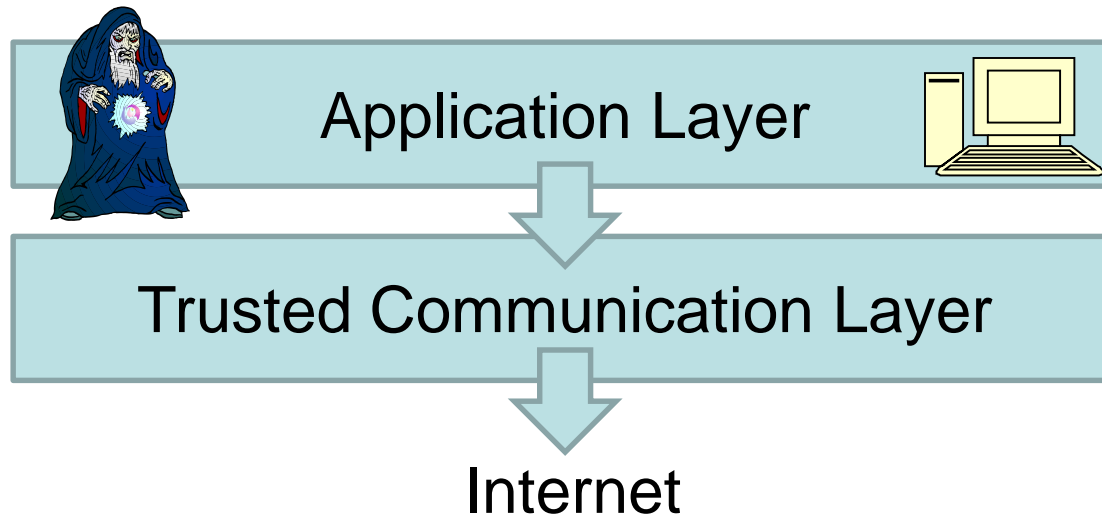
**New approach:** Trusted Communication Model (TCM)



- **Application Layer (AL):** large storage capacity and computational power, but potentially insecure
- **Trusted Communication Layer (TCL):** low storage capacity and computational power but can securely manage ports and keys and can securely execute basic primitives

# Motivation

**New approach:** Trusted Communication Model (TCM)

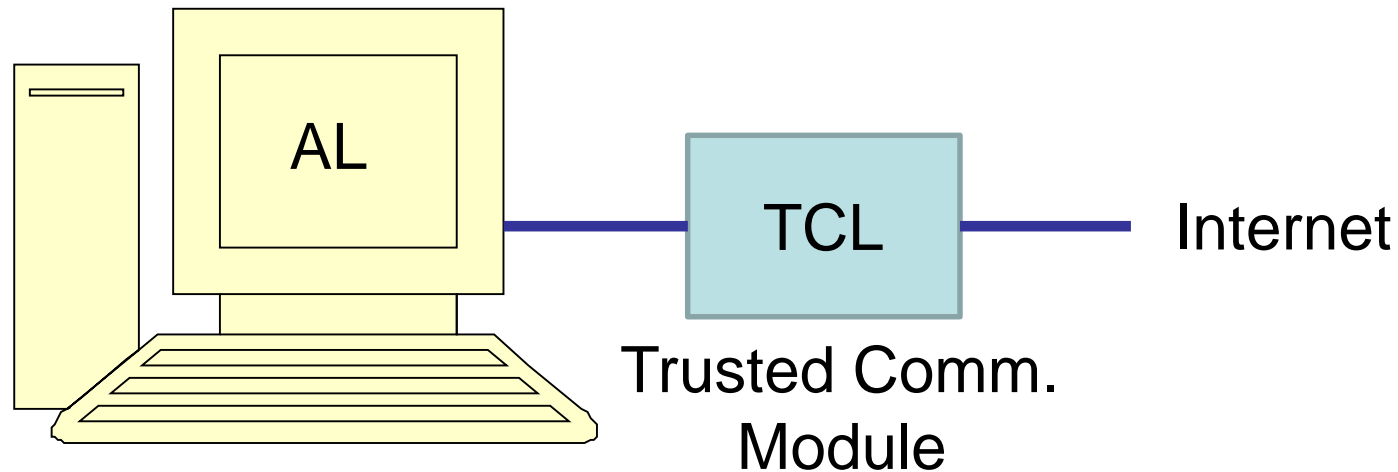


- AL: can be invaded
- TCL: **cannot** be invaded or inspected **remotely**

**Goal of TCL:** support AL in ensuring availability, integrity, and confidentiality

# Goal of the PG

Goal of the PG: develop protocols for a **Trusted Communication Module** that realizes the TCM approach



# Organization of the PG

## SS 2017:

- Crash course about TCM model and programming and hardware environment
- Assignment of topics to groups of 2-3 people
- Work: reading research papers and performing experimental evaluations
- Preparation of report and presentation of results in a block seminar at the end of the semester

## WS 2017:

- Realization of Trusted Communication Module and 1 or 2 applications

# Topics

## Examples of topics:

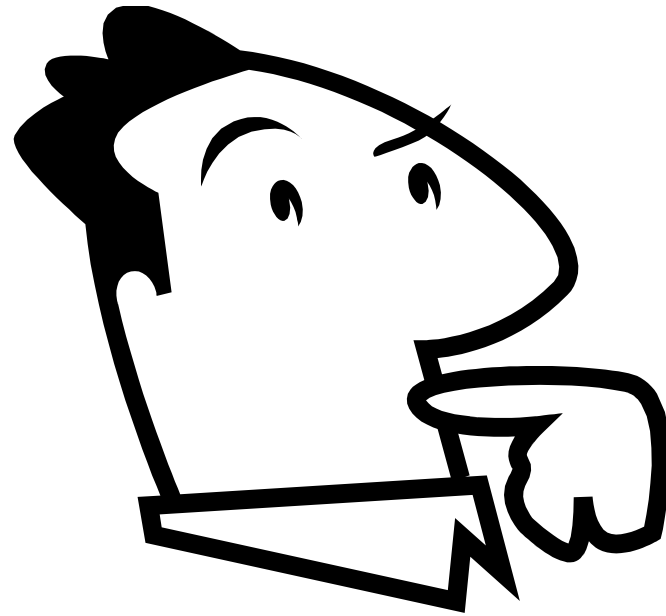
1. Congestion control
2. Clock synchronization
3. Logical Clocks
4. Dynamic Overlay Networks
5. Communication Primitives
6. Coordination Primitives

## Prerequisites:

- ADADS / VADS or
- distr. systems course or
- basic knowledge about networks and protocols

## Applications:

- Authenticated information system
- Robust publish/subscribe system
- Crypto currency



**Questions?**