

PPP for time distribution

Private Public Partnership for the national distribution of traceable time and frequency in Sweden

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Brief history and background

- In 2007, a report commissioned by the government called “Perfectly Timed” was released. (It’s called ‘Perfekt Tajmat’ in Swedish).
- In this report, one of the conclusions was that it’s very important to produce time and frequency in Sweden and that Sweden needs to have a national measurement of time and frequency and be able to distribute said time.
- “That correct and traceable time is available and distributed in a stable fashion and is used in Sweden is a condition for a high-tech information society to function under ordinary conditions as well as under high stress.”

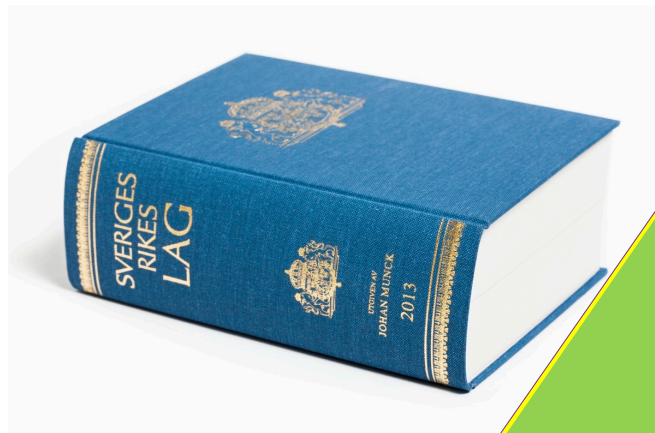
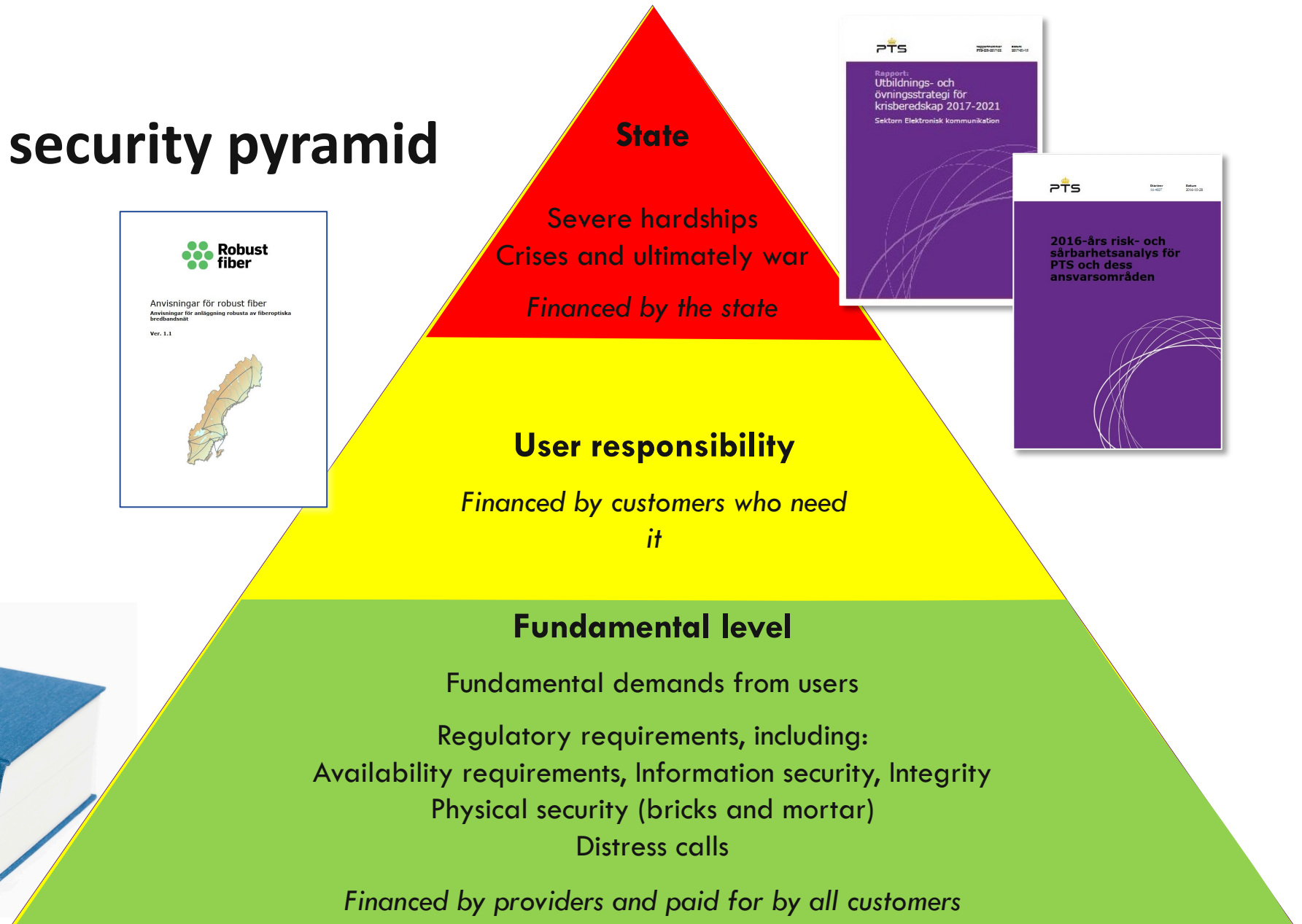
Post- och telestyrelsen (PTS). The Swedish post and telecom authority and it's mission.

- PTS regulates and oversees the Swedish telecom market and its actors.
- PTS is an authority under the Swedish government (regeringen).
- As is the case with all Swedish authorities under the government, PTS is an independent authority.
- PTS responsibilities is mainly defined in the “instruction.” (2007:951). Its main responsibility is to be an “authority with responsibility for postal- and telecom-areas. It is also an authority for preparedness and with responsibilities against the entire sector.

More about the instruction and PTS mission.

- 4 §. PTS is tasked to promote access to safe and effective electronic communications, [...]
- Promote robust electronic communications and reduce the risk of interference and interruptions, including procurement of strengthening measures and promote a stronger ability to handle crises.

The network security pyramid



But what about the money?

- PTS is funded in part by a “robustness fee” that is paid by telecom operators. The yearly fee total is **roughly € 10m**. This fee is returned to PTS as “**grant 2:5 ap. 1**”. 2:5 ap 1 is for 2023 **roughly € 13,5m**.
- Another part of the “robustness budget” is completely funded over the state budget and is collected as taxes. This is known internally as “grant 2:5 ap. 3.”



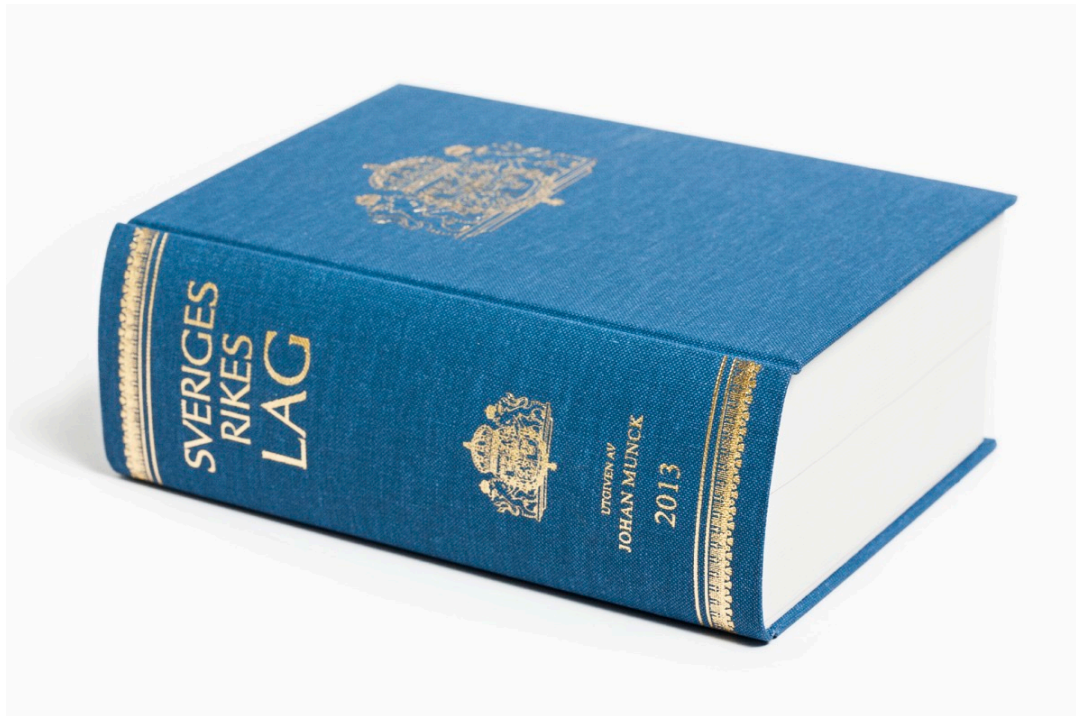
Grant post 2:5 ap. 1.

- "The grant post can be used to fund measures to protect electronic communications against severe threats and severe strains on society in **peacetime**. The grant post can also be used for procurement of and reimbursements for services, equipment, etc. to protect **society** against severe threats and severe strains on electronic communications in **peacetime**."

Grant post 2:5 ap. 3. Civil defense

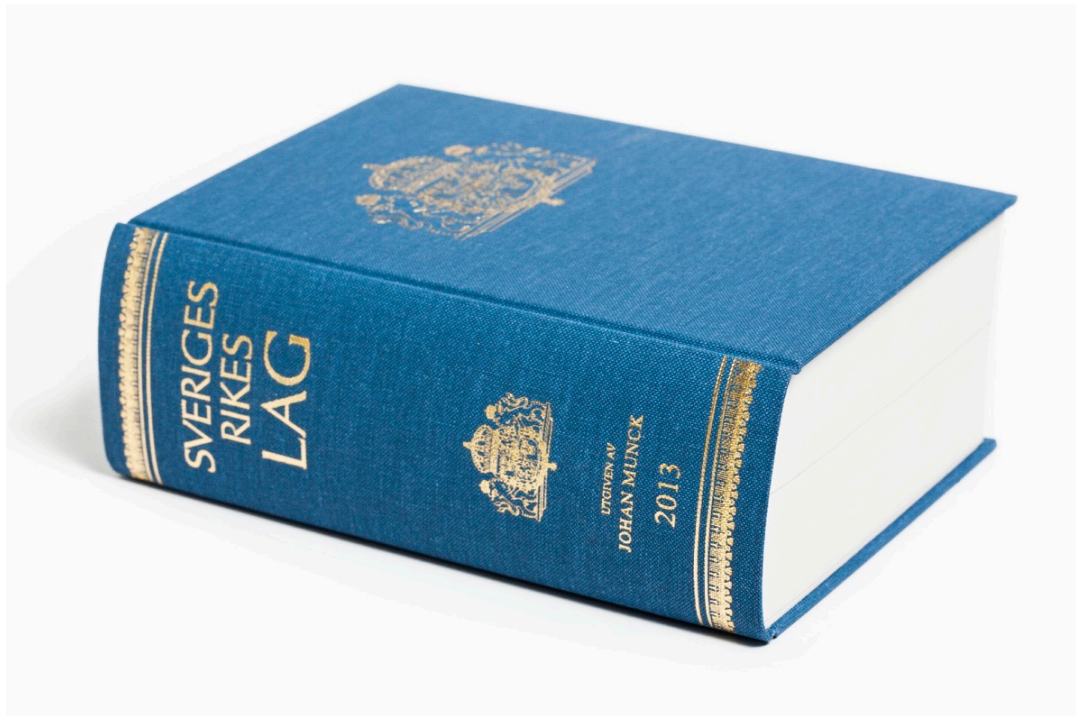
- "The grant post can be used enhance availability and increase robustness in electronic communications and post and measures for high alert"

Regulation (2018:1300) about state aid for reliable and robust electronic communication



- Apart from the instruction, that only allows government procurement as a means of spending money, we also have a special regulation.
- It's a Swedish regulation that is part of the EU regulations regarding "Services of General Economic Interests (SGEI)"

Regulation (2018:1300) about state aid for reliable and robust electronic communication



- 1 § This regulations includes provision about state aid to companies to implement certain measures for reliable and robust electronic communications with the purpose of protecting the communications against severe threats and strains in peacetime and in times of high alertness.

Aid can be given if funds are available.

Regulation (2018:1300) about state aid for reliable and robust electronic communication

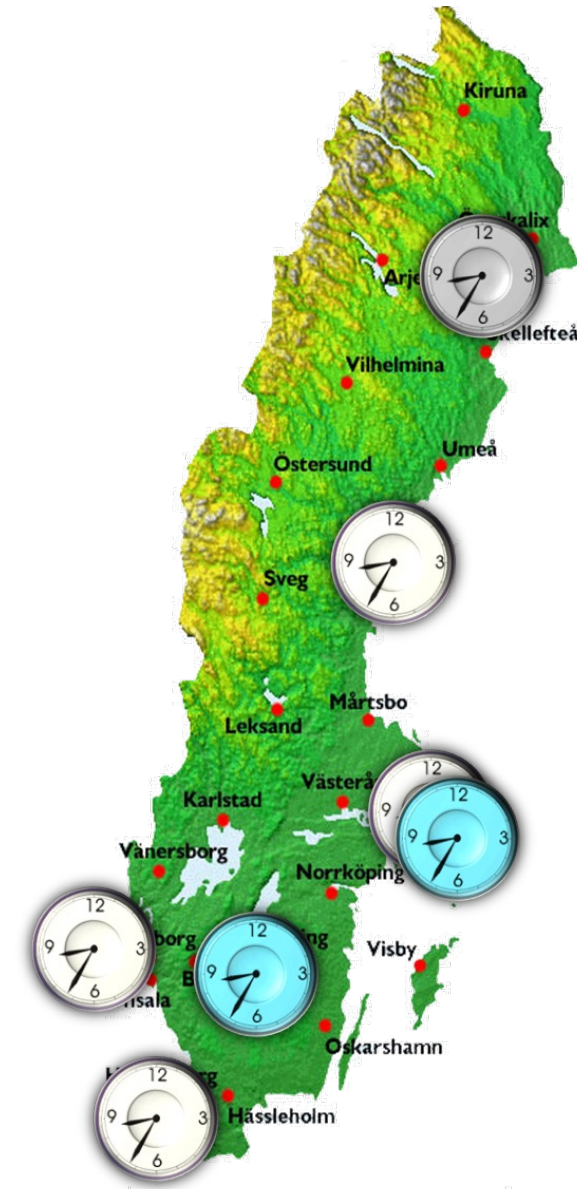


4 § Aid according to this regulation can not be given for a measure that

1. A company is required by law to implement
2. A company can do on commercial grounds, or
3. can be procured in open competition.

What came of all of this?

The case of robust and traceable time and frequency.



PTS 21-15437.

- Netnod shall perpetuate, develop and manage the service "Production and distribution of robust and traceable time and frequency." In accordance with what is previously stated the service shall be delivered under a period of three years.
- Netnod shall perform its duties by providing robust and traceable time and frequency as a **service of general economic interest**. Access to the system shall be given in a **competition neutral and non-discriminatory manner to third parties**.
- The decision comes with a 22-page document with terms and conditions. It's quite dense, but there is one thing I particularly like: condition no. 3.8.1. "Routines for handling of open source code."

PTS 21-15437. Condition no. 3.8.1. Routines for handling of open source code.

- Source code that has been developed in connection with the development of the System should, as far as Netnod deems it suitable, be made available to the general public under a license for opensource code of Netnods choosing. The same shall apply for any code that is developed during the perpetuation of the system.

Participation in the development of standards

- One thing this Public Private Co-operation has given the world is NTS.
- The development of the NTS standard was funded by PTS.
- The code for both a reference implementation of an NTS server/client and the FPGA that Netnod uses to serve NTS requests is available on github.

Thank you!