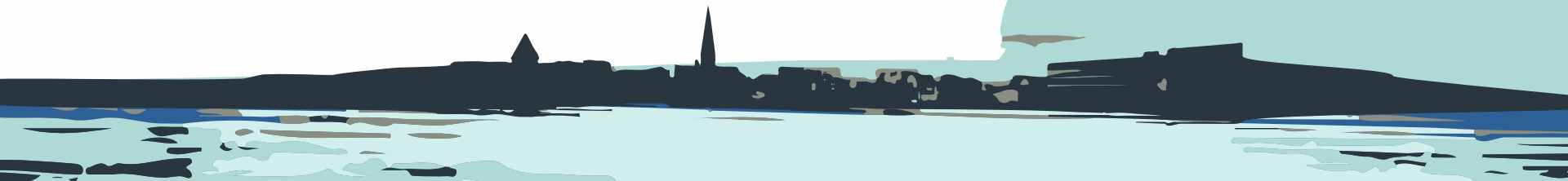
TAPAS - Testbed in Aarhus for Precision positioning and Autonomous Systems

TAPAS – General description

- Vision and Perspectives
- Network Design
- Project examples

Per Lundahl Thomsen,
TAPAS Project Manager
E-mail: PLT@SPACE.DTU.DK



TAPAS
Vision and perspective

TAPAS
Vision and perspective

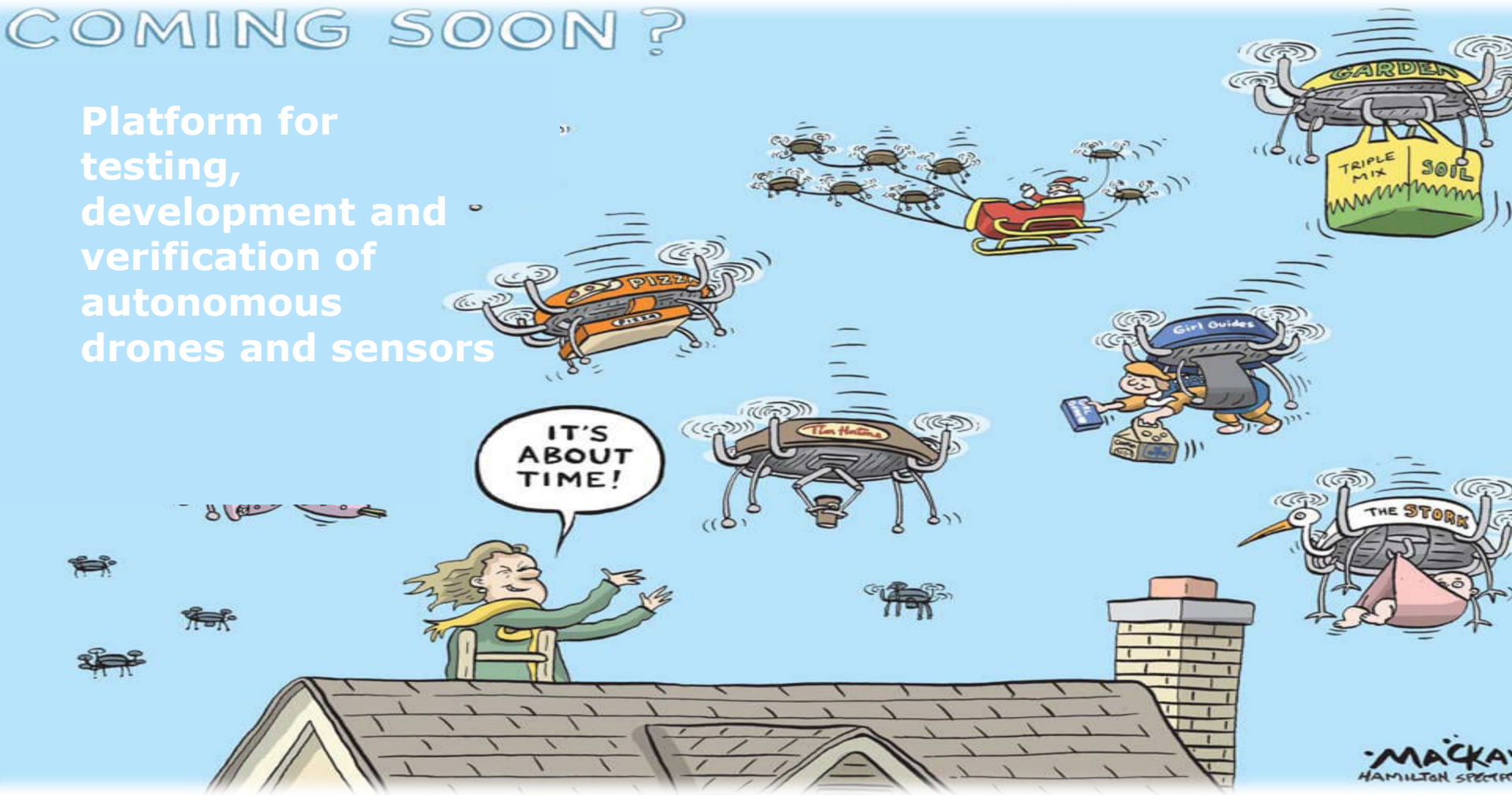
Platform for testing, development and verification of autonomous ships and sensors

TAPAS
Vision and perspective

Styrelsen for Dataforsyning og Effektivisering

DTU

Platform for testing, development and verification of autonomous drones and sensors



TAPAS
Vision and perspective

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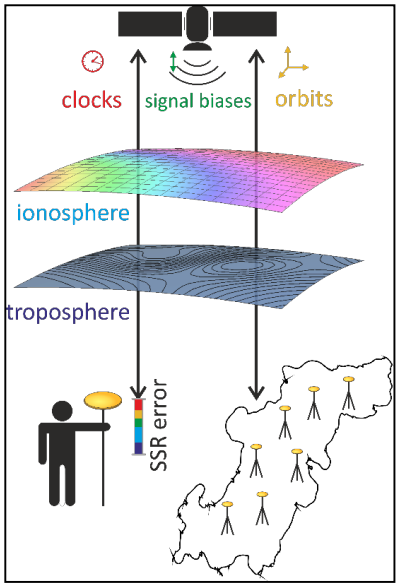
Vision and perspective

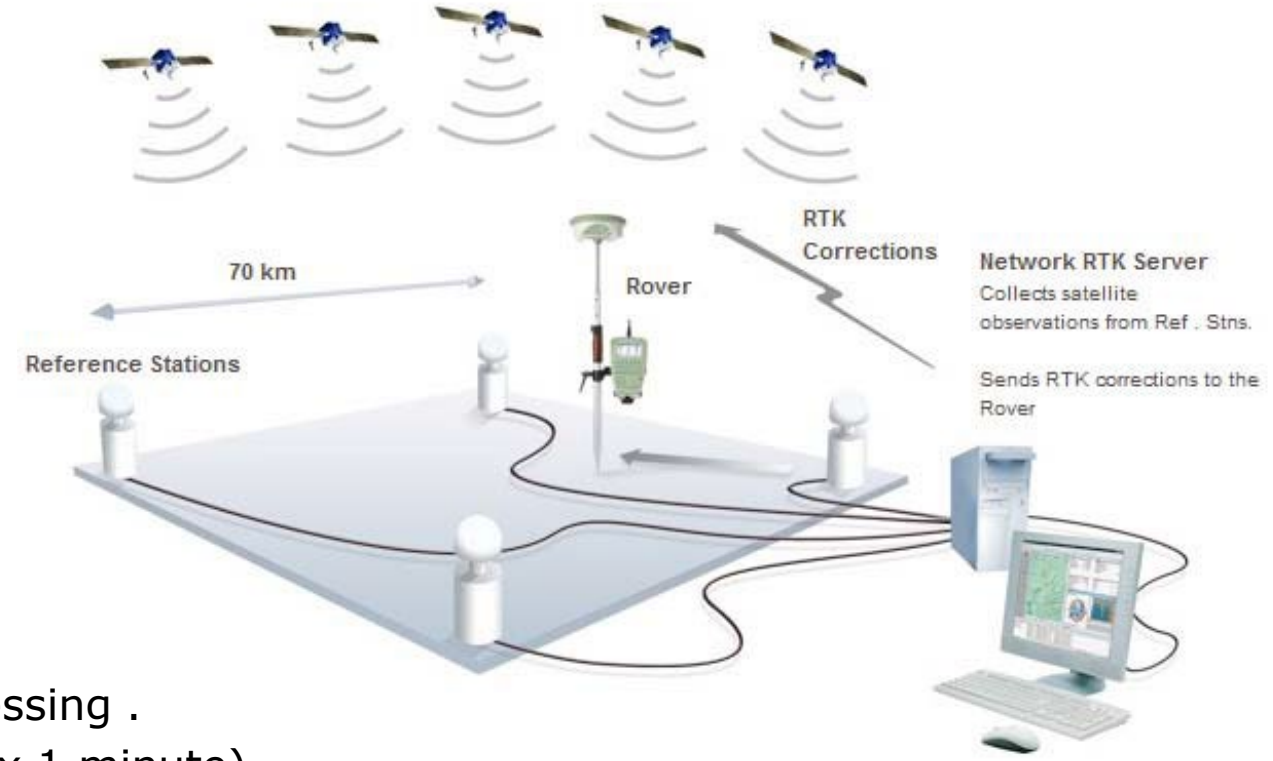
Styrelsen for Dataforsyning og Effektivisering

DTU

Platform for testing, development and verification of spart city products

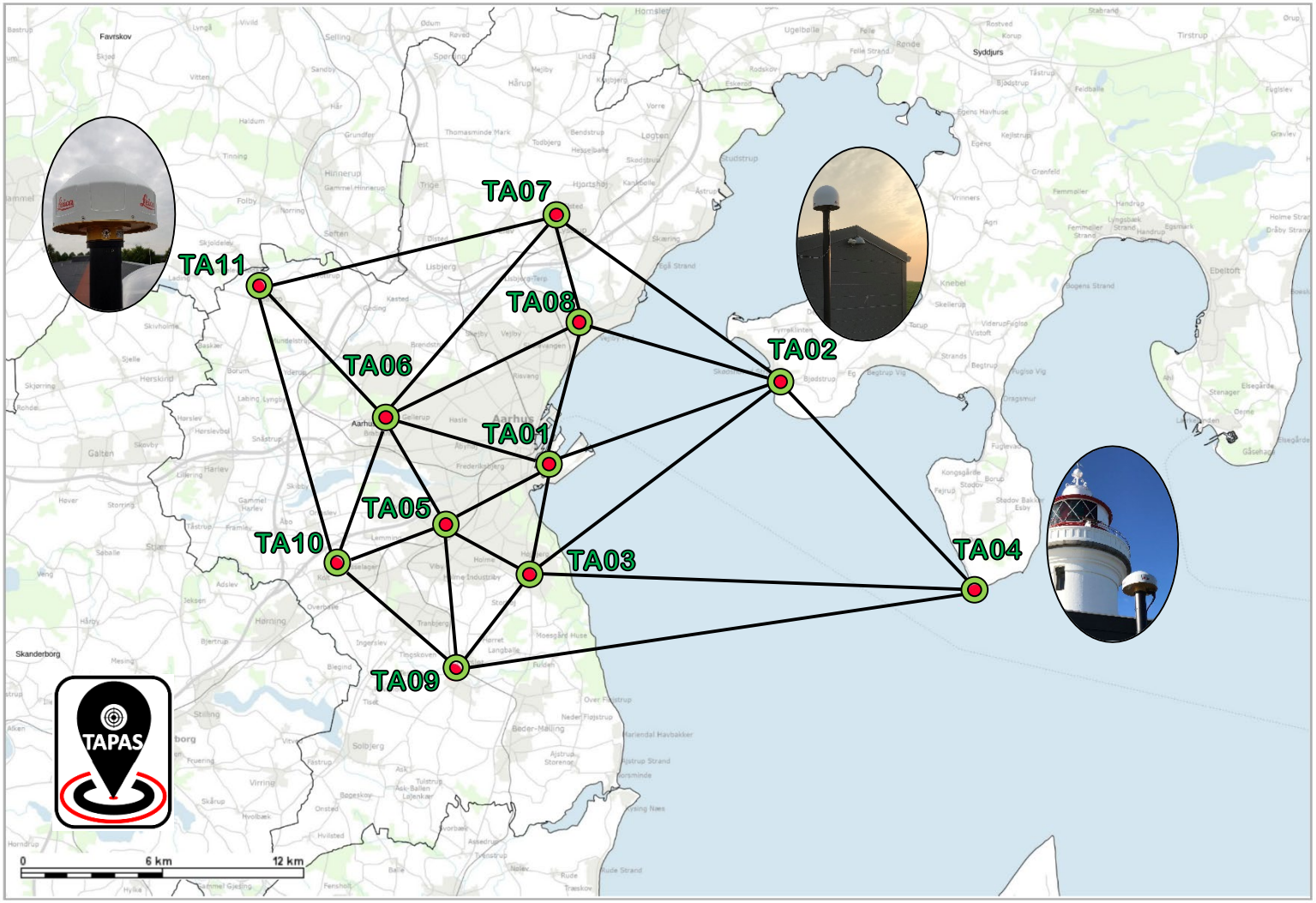
TAPAS
Traditional RTK network's!





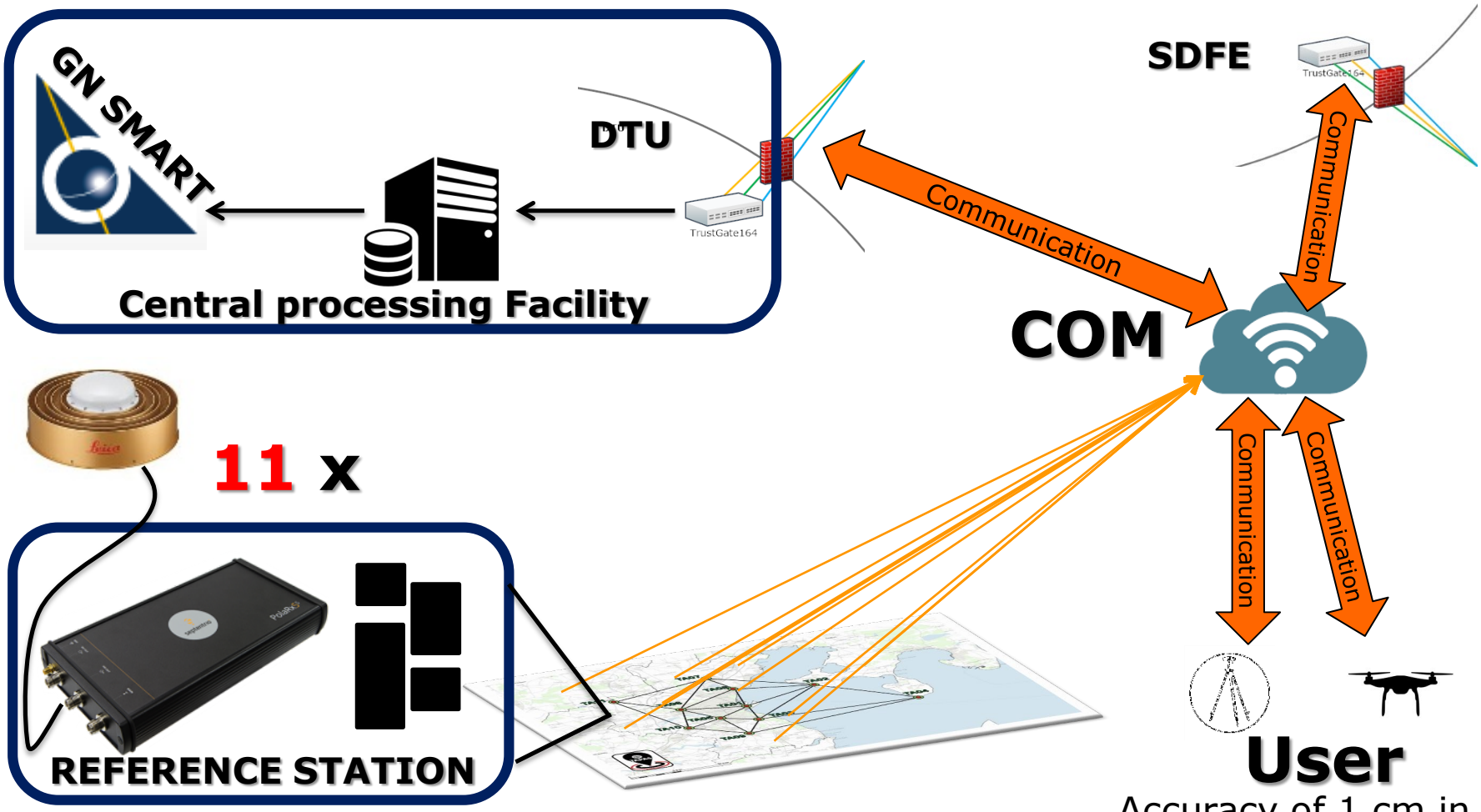
- GPS Baseline.
- Always Central processing .
- NON realtime (approx 1 minute)
- Long distance between reference stations
- Currently not really usable by Autonomous vehicles
- **How do we upgrade to enable a platform we can use**

TAPAS – How ?.
New generation network is here!



TAPAS – FULLY Deployed. Unique in Real Urban Environment !

TAPAS – Implemented Design. New backbone for Autonomy !



TAPAS – Implemented Design. Flexibility & Reliability!

TAPAS – Implemented Design. Stability & Field Of View!

TAPAS – Utilisation 1/2.
New backbone for Autonomy !

- 11 x TAPAS Stations and network-solutions are fully implemented, tested and verified.
- TAPAS is an open **research and development platform** to be used by interested third parties, customers and developers. Data is open and freely accessible.
- TAPAS is delivering a real-life test environment of city, harbor, bay and air. It enables precision positioning below **1 cm³** in real time
- TAPAS is aiming to be the test-platform for technology of the future, such as self-steering vehicles, smart city applications, IOT, 5G and autonomous systems, who depend on constant and reliable positioning data.

TAPAS – Utilisation 2/2.
New backbone for Autonomy !

Goal of a smart city is to make cities more livable, less congested and, importantly, far more environmentally friendly.

Precision positioning is a vital piece in the puzzle to accomplish this.

Examples include:

- Autonomous Systems are promoting and even offering ride-sharing, bike-sharing services etc.
- Autonomous Cars and Smart-city traffic control will reduce traffic congestion
- Smart Street Lights which is brightened if a user is approaching or dimmed when leaving.
- Garbage collection is only performed when a message is received from a specific garbage-can that it is full.
- Effective Roadpricing in city centers, will reduce unneccessary traffic and increase public transportation, ride-sharing etc..
- Smart assisted Parking will reduce emissions.
- Etc. Etc.

TAPAS: Current status
Few Project Examples!

CityShark

CAPTIC

Conplex

Capra Robotics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