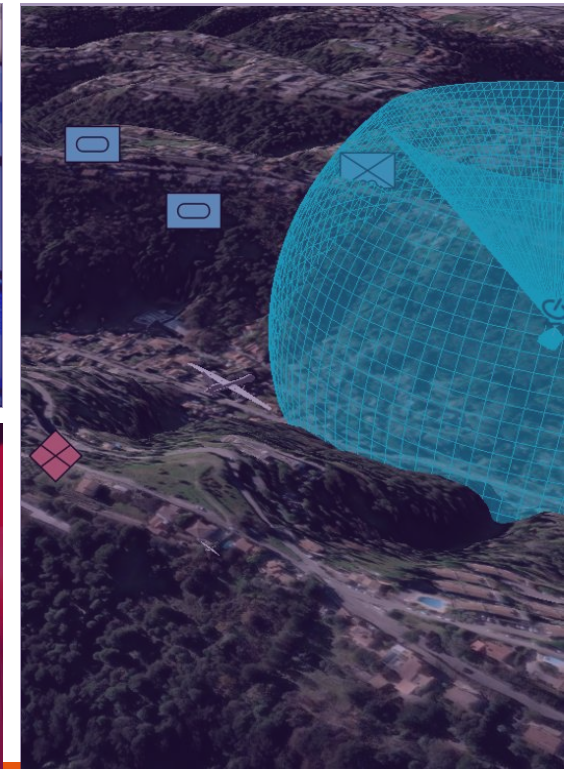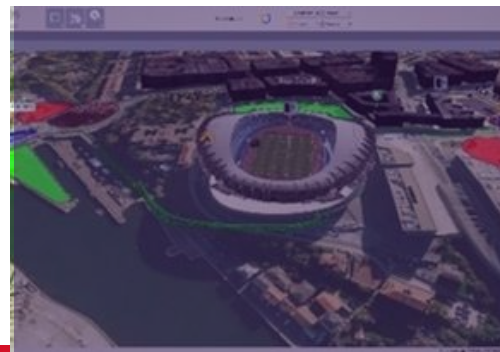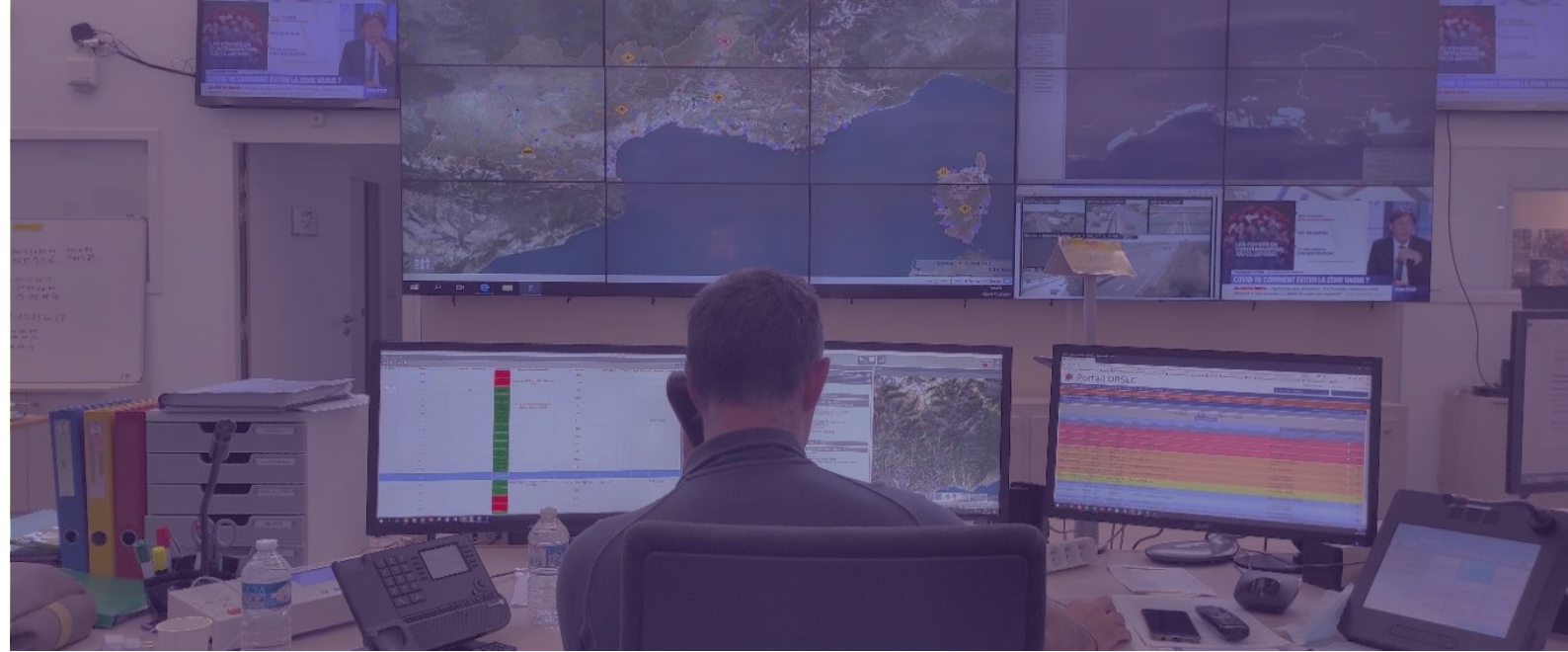# Key Enabling Technologies and Tools for Urban and Critical Entities Resilience

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Resilience of Smart cities and critical entities

- Prevent, resist, absorb, and recover from disruptive incidents (CER Directive).

  - Natural hazards, terrorist attacks, insider threats, or sabotage, as well as public health emergencies

- A multi-domain challenge

  - Ensuring physical (air, land, sea)/cyber security

  - Managing incidents potentially involving large populations

  - Preserving accessibility and service continuity / supply chain

  - Proper consideration of social and ethical Aspects

- A matter of cross-organizational collaboration involving

  - Security experts

  - City planners, infrastructure designers

  - Private / public security operators including local / national LEAs

  - Infrastructure operators and city managers

  - Policy makers, SEL experts...

Resilience of Smart cities and critical entities

- Resilience by design: An integrated approach is needed, from planning to crisis management and recovery phases

  - Vulnerability assessment and risk analysis

  - Security and recovery strategy planning and proactive foresight

  - Training in credible conditions

  - Effective management of all type of incidents and post-event situation while favoring quick recovery

  - Enhanced cooperation between all needed actors and stakeholders

a Sopra Steria company

Resilience of Smart cities and critical entities

- Concept explored by CS GROUP through European R&I actions

  - A Digital Twin centric platform for security management

    - Data driven

    - Immersive

    - Ubiquitous

    - Open and highly interoperable

  - Tailored for multi-level, cross-organizational operations

    - Knowledge sharing

    - Joint operations with shared situational awareness

    - Next-gen C4ISR: Computerized Command, Control, Communications, Intelligence, Surveillance, and Reconnaissance

  - Augmenting human capacities thanks to Key Enabling Technologies

    - Digital Twins and eXtended Reality for pervasive awareness and intuitive interaction with the real world/systems

    - Simulation for analysis, planning, anticipation, and decision support

    - Artificial Intelligence for amplifying human intelligence

    - Smart autonomous UxVs to support/replace human operators and responders

From ideation to adoption, a pathway paved with KETs

CRIMSON
Smart security and operation management

www.crimson.eu

3D simulation & visualisation

eXtended Reality

2007 — CRIMSON FP7 project

2010 — INDIGO FP7 Project

Digital Twin based hypervision and C2

2014 — VASCO FP7 Project

Adopted by first SDIS

2017

First deployment abroad (Tunisia)

2019

10+ critical infrastructures

2020

25 SDIS

2021

EU Domino FSX exercise

2022

40 SDIS
7 COZ & COGIC
Rugby World cup

2023

2024 — Adopted by 50+SDIS & Critical infrastructures of French MoD — Paris 2024 Olympic Games

2017 — STEPWISE ISF Project

Smart autonomous UxVs Environment sensing

2020 — S4ALLCITIES H2020 Project

2021 — INTREPID & APPRAISE H2020 projects

Intelligence Amplification

Augmented Responders

5

STEPWISE in a nutshell

Simulation, Training, & Evaluation for the Protection of croWded publIc SpacEs

- 2019-2021

- Co-funded by the European Commission "Internal Security Fund – Police" (ISF-P)

- https://stepwise-project.eu

- Created a ground-breaking platform enabling the use of the Urban Digital Twin for the analysis of vulnerabilities and the virtual design of security plans without claiming the space
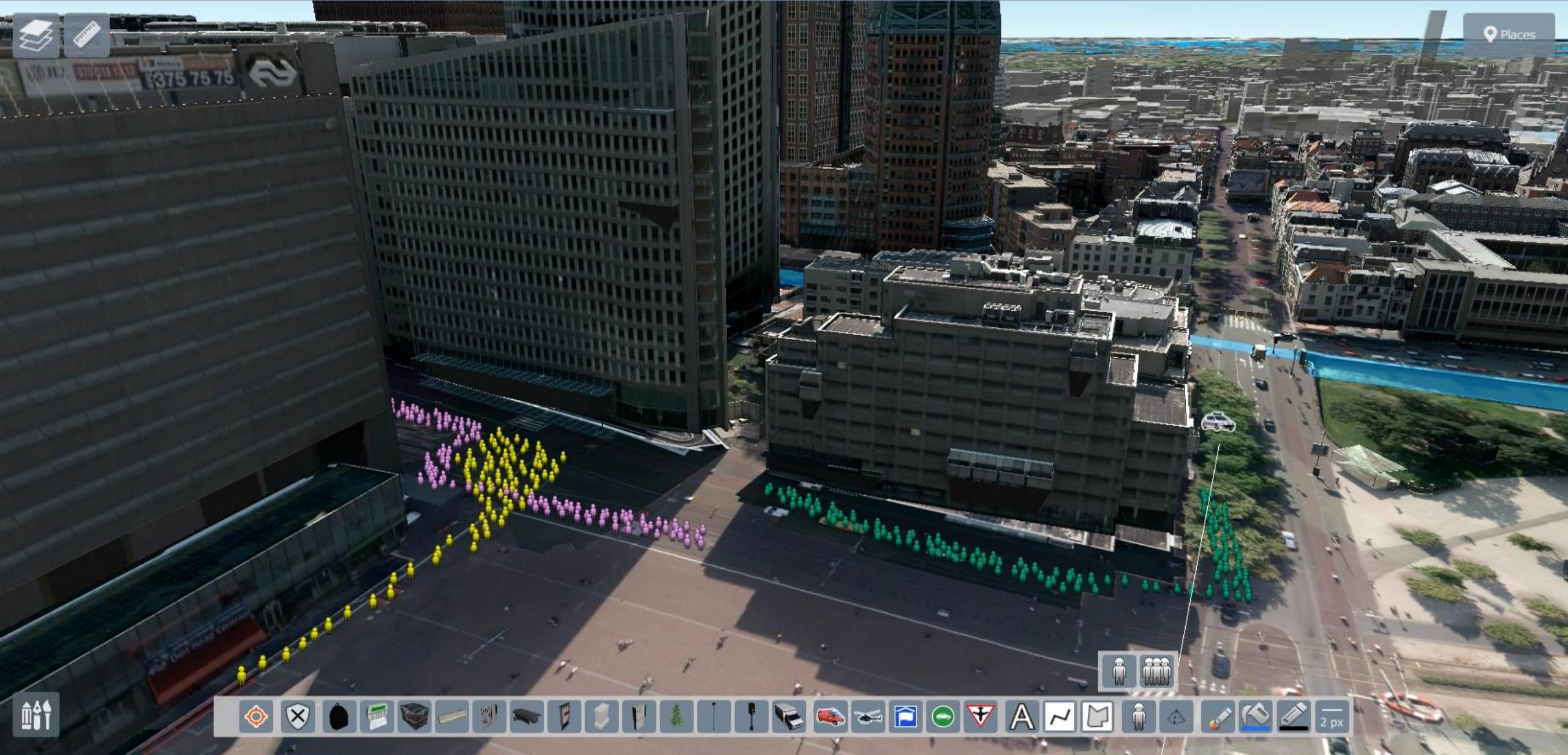

- Produced the Crimson Sandbox product

https://crimson.eu/en/solutions/crimson-sandbox

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November, 13 2020

Auto-Share

Overview

3D main
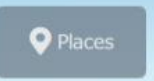
Places

375 75 75

aschilling   FRM1_20201113_1337   Connected

ALADDIN in a nutshell

Advanced hoListic Adverse Drone Detection, Identification, Neutralization

- 2017-2020

- Co-funded by the European Commission in H2020 SEC-12-FCT-2016-2017: Technologies for prevention, investigation, and mitigation in the context of fight against crime and terrorism

- https://aladdin2020.eu

- Developed an innovative AI-powered system for the detection, identification and neutralization of UAVs in urban environments.

- Produced the Boreades leading C-UAS product adopted to protect major events such as G20, Rugby World Cup, Olympic games, UEFA competitions…

http://boreades.eu

AIR OPERATIONS CENTER
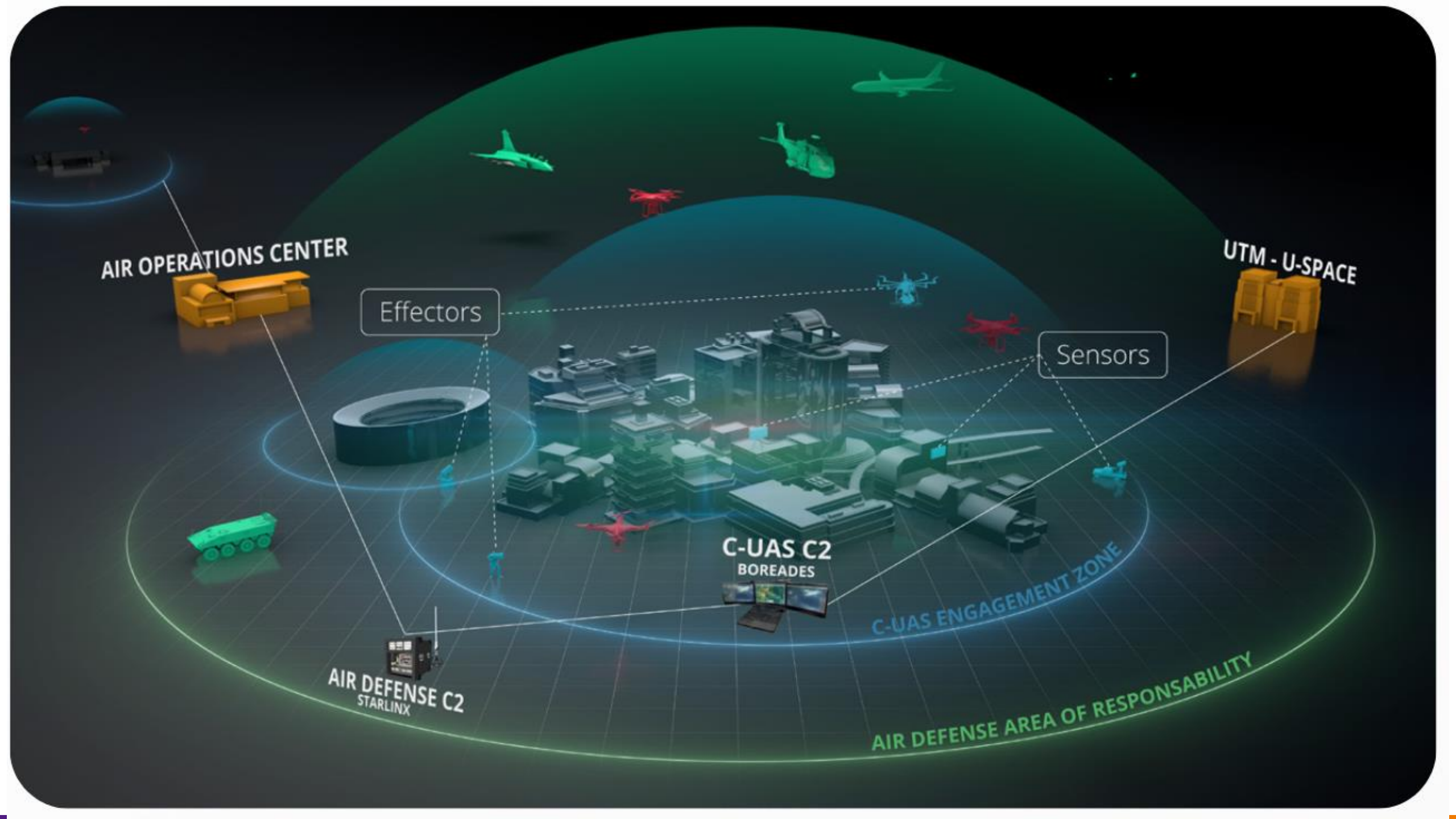
UTM - U-SPACE

Effectors

Sensors

C-UAS C2
BOREADES

AIR DEFENSE C2
STARLINX

C-UAS ENGAGEMENT ZONE

AIR DEFENSE AREA OF RESPONSABILITY

APPRAISE in a nutshell

fAcilitating Public & Private secuRity operAtors to mItigate terrorism Scenarios against soft targEts

- 2021-2024

- Co-funded by the European Commission in H2020-SU-SEC-2020 : Information and data stream management to fight against (cyber)crime and terrorism

- https://appraise-h2020.eu

- Develops an integrating platform

To improve the security and safety of public spaces while preserving the freedom of citizens.

To protect soft targets from an evolving range of cyber and physical terrorist threats.

To provide an integrated security approach bringing together public and private security operators, before, during, and after an incident occurs.

APPRAISE in a nutshell