



Mobile Sensing and Edge Computing Technology (MSECT) Research Group

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Background - Definition

1. **Edge computing** is optimization of cloud, to move the computer close to the source, to the edge.
2. Driven by a need to overcome **cloud overhead in latency** and **bandwidth** and a demand for more **local processing**, edge computing is poised to enable billions of **new IoT end-points** and **real-time local** artificial intelligence/machine learning (**AI/ML**) for autonomous systems.
3. Edge computing allows smart applications and devices to **respond to data** almost **instantaneously**, as it is being created, eliminating lag time, which is critical for technologies.

Background - Definition

4. Edge computing is a **decentralized model** which places computing nodes closer to the source of interaction.
5. Edge computing is a model where “information processing and content collection and delivery are placed closer to the sources, repositories and consumers of this information.”
6. Edge computing optimizes technological interactions and reduces latency at the point of origin to enable more effective and real-time data consumption.
7. Edge computing is quickly becoming the most efficient path for localized interactions.

Research Topics

- Mobile Edge Computing
- The Fog/Edge, Mist Computing, and Big Data system with IoT
- Multi-access Edge Computing (MEC)
- Mobile Crowd Sensing (MCS) in Edge Computing Environment
- Communication protocols in Edge Computing Environment
- Edge Data Processing
- IoT Platform
- Mobile and IoT Device Management
- Lightweight Streaming Analytics in Edge Computing Environment

Benefit of Edge Computing

Faster Response



- Operating at the source of data
- Faster response time for triggers

Cost Effective



- No need to transport everything to cloud
- No recurring cost

Edge Computing

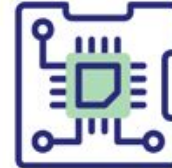


Secure



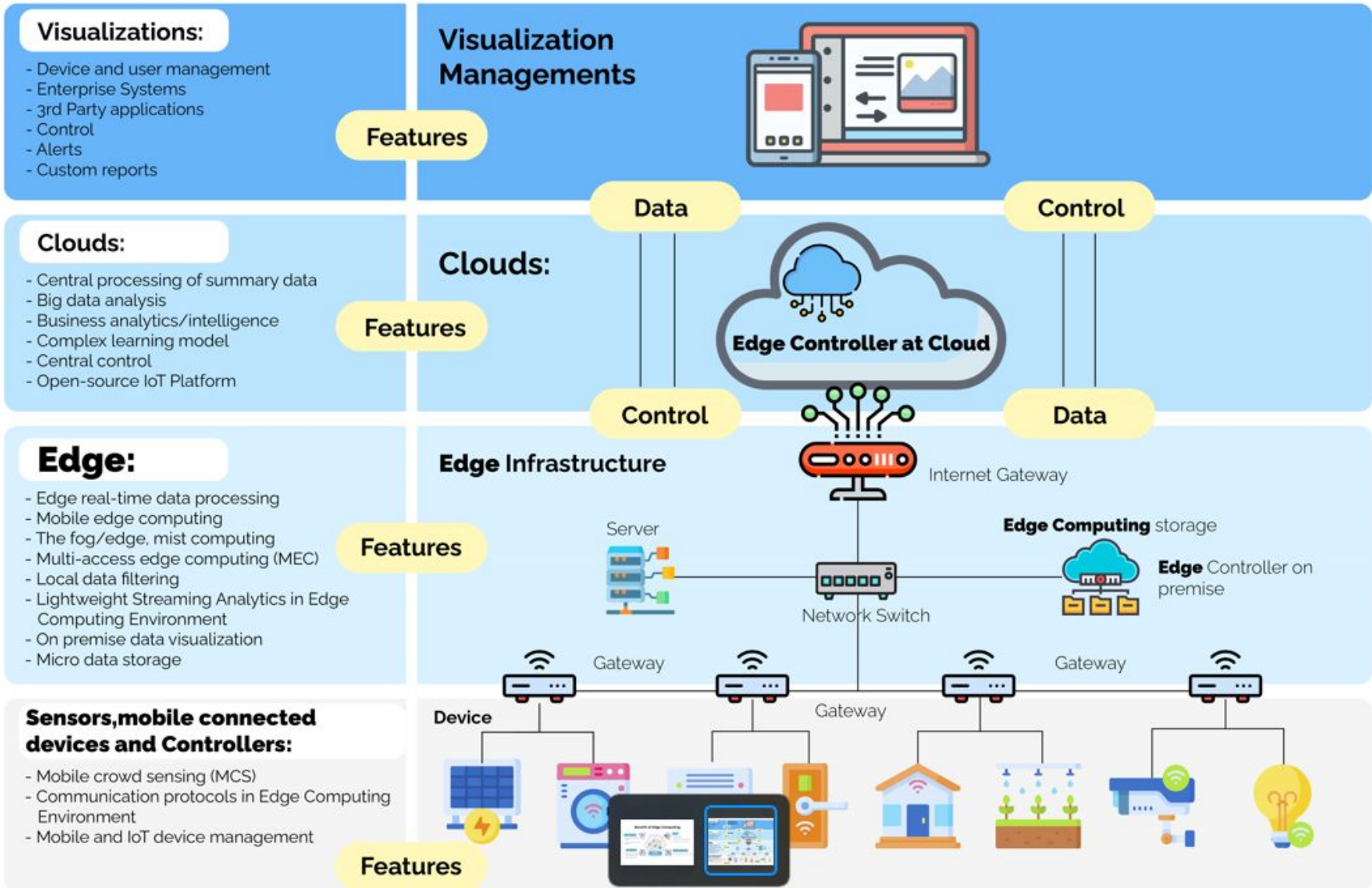
- Locally stored
- No theft during transport
- Compliance maintained

Reliable Operations



- Can work without connectivity

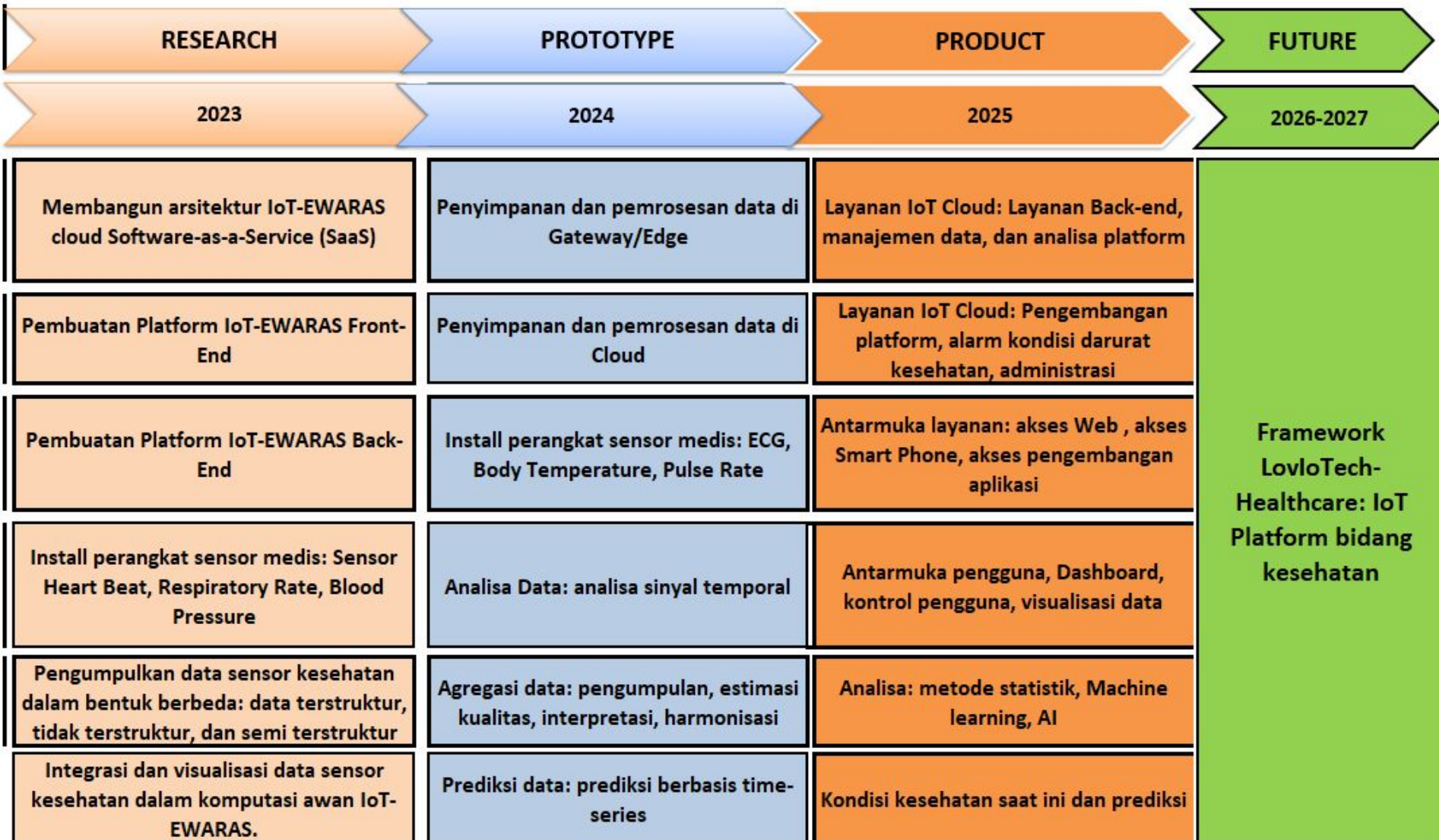
Framework Mobile Sensing and Edge Computing Technology (MSECT)



Roadmap
Mobile Sensing and Edge Computing
Technology (MSECT)
Based On Project

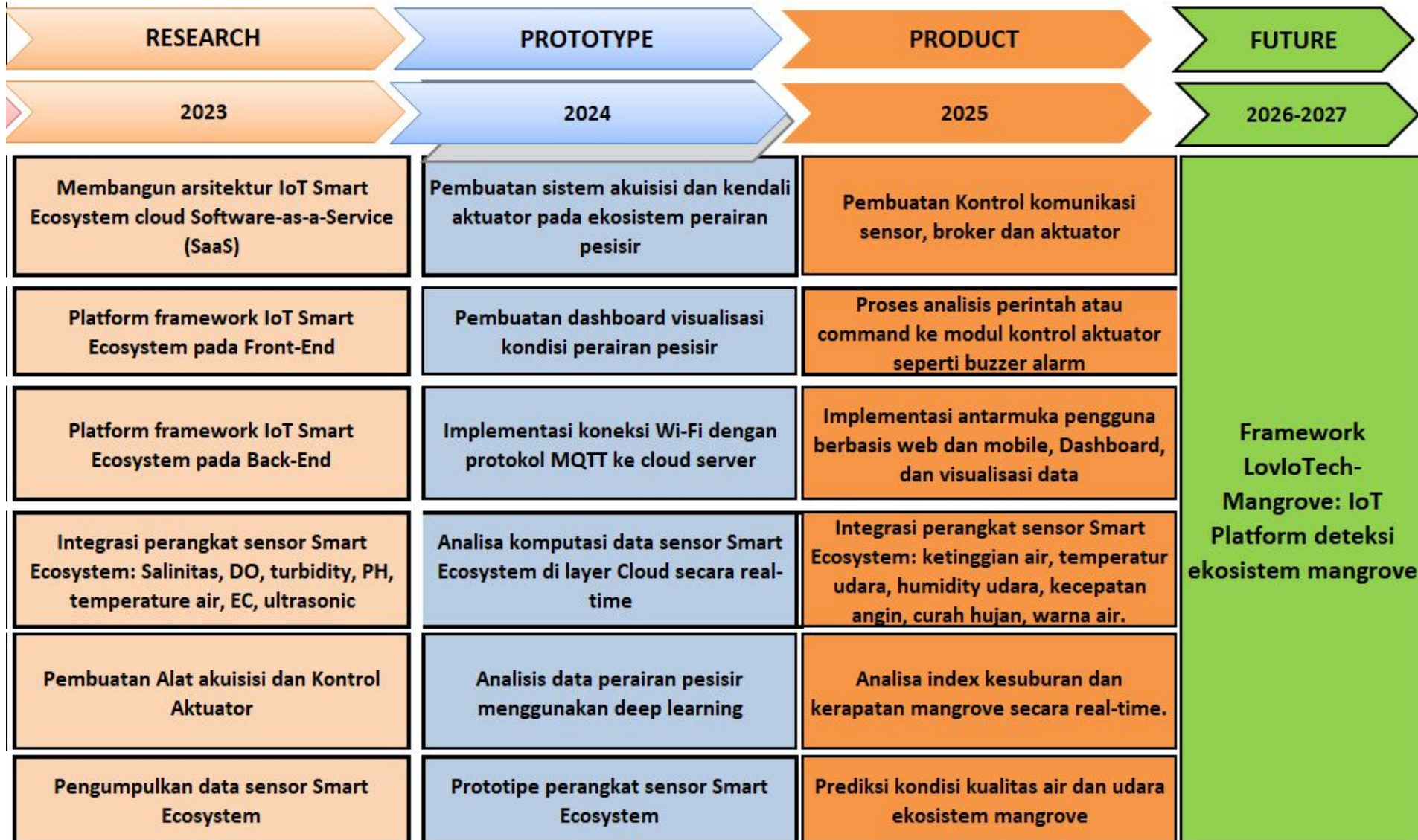
Roadmap

LovloTech-Healthcare: : IoT Platform bidang kesehatan



Roadmap

LovloTech-Mangrove: IoT Platform deteksi ekosistem mangrove



Roadmap

Other Project - ON GOING ???

Member

1. M. Udin Harun Al Rasyid
2. Iwan Syarif
3. Isbat Uzzin Nadhori
4. Arif Basofi
5. Ahmad Syauqi Ahsan
6. Grezio Arifiyan Primajaya
7. Weny Mistarika Rahmawati
8. Alfi Fadliana

Mitra Penelitian

Industri:

1. Trusmedis (<https://trustmedis.com>): Ahmed Zulkarnain, Achmad Abidurrohman
2. Punggawa Studio (<https://www.punggawastudio.com>): Rafly Arief Kanza
3. PT Indodak Nasional Indonesia: Bahrul Amaruddin
4. Telkomsel IoT (<https://telkomseliot.com>): Fadli Hamsani
5. PT. Mixitech Graha Teknik (<http://mixitech.co.id>): Firdaus
6. PT Equinix (www.equinix.com)
7. PT Sapta Cakra Manunggal (<https://www.scmanunggal.com>)
8. PT Karya Merapi Teknologi (KM Tek) (<https://www.kmtech.id>)

Mitra Penelitian

Akademisi dan Pemerintah:

1. FK Universitas Airlangga: dr. Budi Utomo
2. Asia Eastern University of Science and Technology,
Taiwan: Huai-Kuei Wu
3. Biro Riset Observasi Laut (BROL) Kementerian
Kelautan dan Perikanan (KKP): Romy Ardianto
4. Badan Riset dan Inovasi Nasional (BRIN): Yulianto

Target Luaran

- International/National Journal
- International Conference
- Paten/Paten Sederhana/Hak Cipta
- Buku Ber-ISBN
- Produk Industri
- Student Competition: KMIPN, GEMASTIK
- Proposal Hibah Penelitian Tingkat Nasional dan Internasional