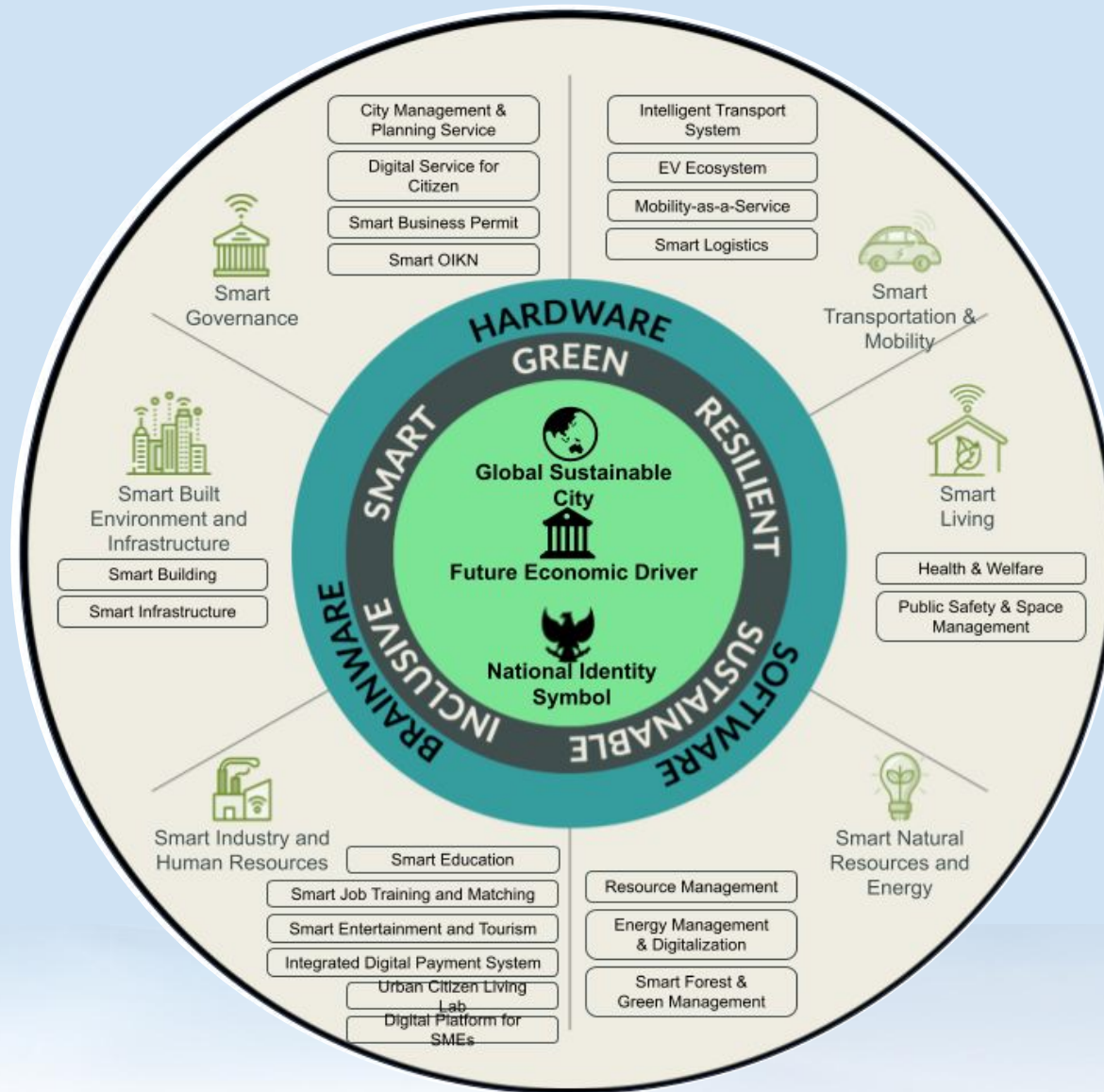NUSANTARA

Nusantara Command Center Tech Landscape 2024

Deputy for Green and Digital Transformation, Nusantara Capital City Authority

Smart City Investment Package Nusantara Capital City Authority

Market Briefing, March 2024

Smart City Nusantara

1 Governance

- Digital Identification
- Data Exchange Layer
- Application's Layer

Smart Administration	Smart Permit
Digital Identities	

2 Transportation & Mobility

- Intelligent Transport System
- MaaS
- EV Ecosystems
- Smart Logistics

Urban Air Mobility	EV Charging
Autonomous Driving System	IoT in Logistics

3 Living

- Air Monitoring
- Health & Welfare
- Public Safety & Space Management

Telemedicine	Early Warning System
Threat Detection	Smart Public Spaces

4 Natural Resources & Energy

- Energy Management & Digitalization
- Resource Management
- Smart Forest & Green Management

Smart Grid	Smart Waste Management
Biodiversity Monitoring	

5 Industry & Human Resources

- Smart Education
- Smart Job Training and Matching
- Smart Tourism
- Metaverse Digital Social Platform
- Digital Payment System
- Technology Demonstration Center
- Urban Citizen Living Lab
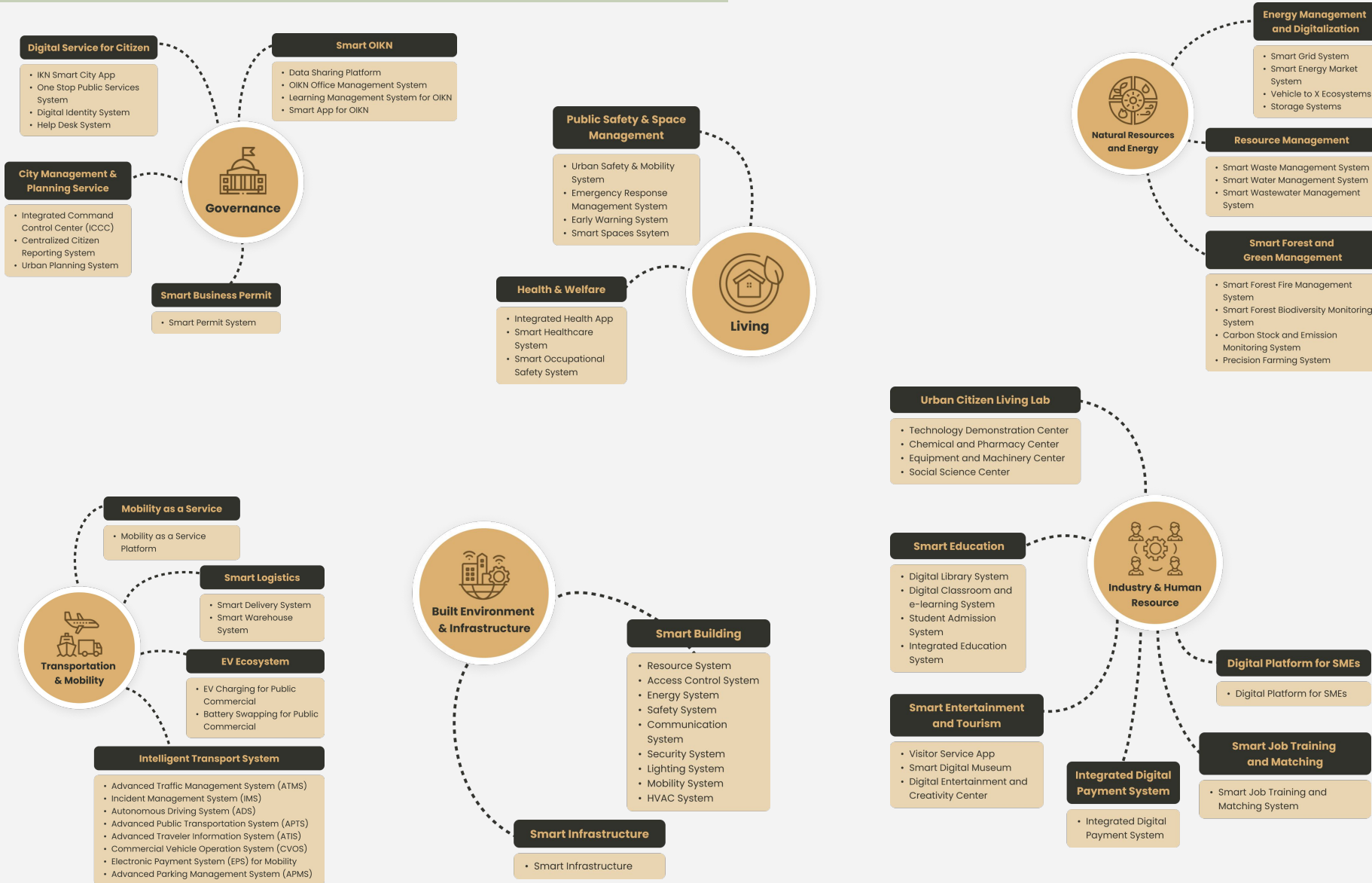- Digital Platform for SMEs

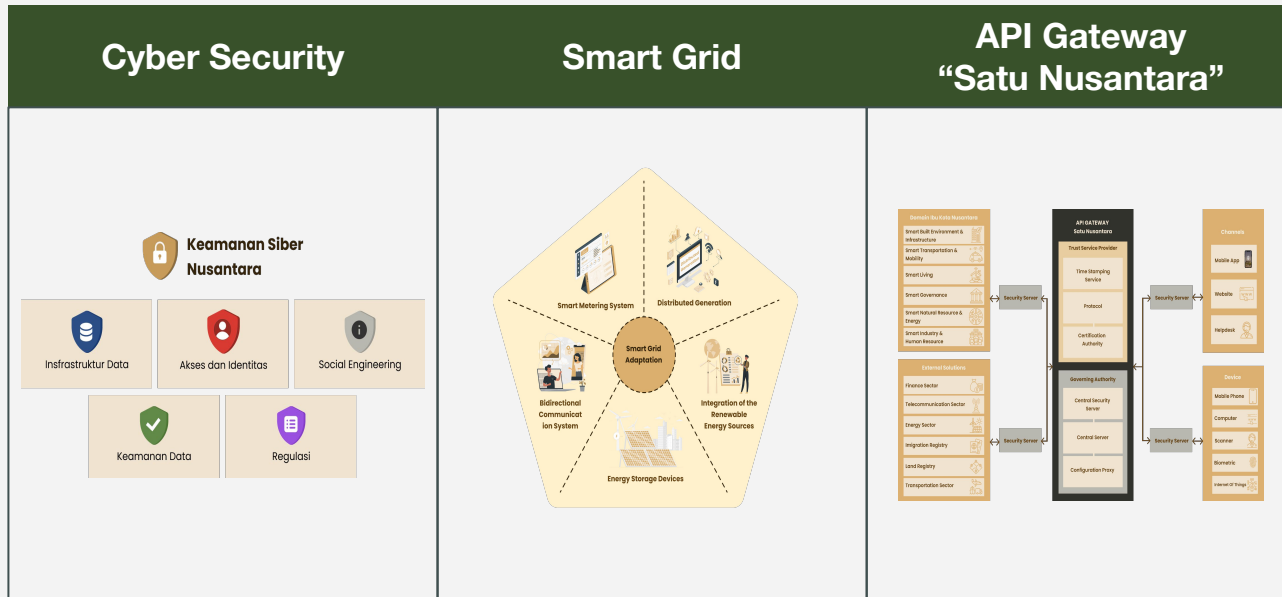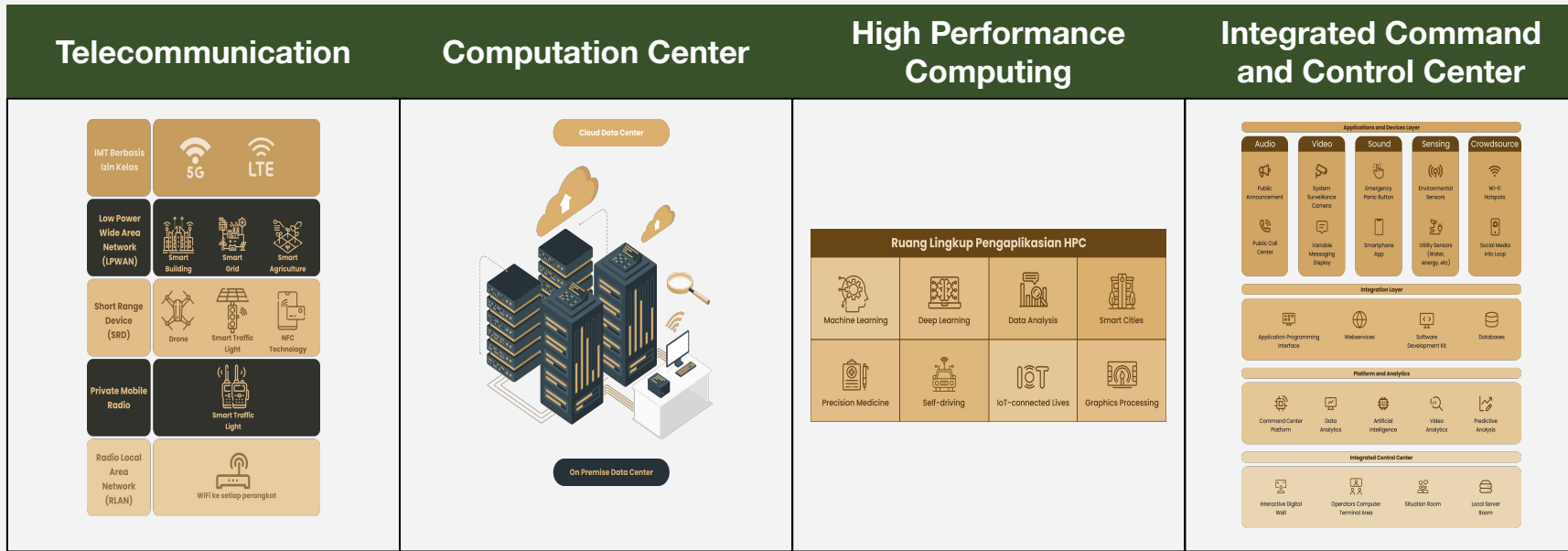| Digital Libraries	Digital Museum	Smart Industries

6 Built Environment & Infrastructure

- Facility Management System
- Building Management System
- Propagation of Internet Acces
- Smart Infrastructure System

Digital Twin	Smart Building	Smart Pole
Building / Infrastructure Automation System		

67 **Smart Features** Smart City Nusantara

NUSANTARA

Governance

Digital Service for Citizen
- IKN Smart City App
- One Stop Public Services System
- Digital Identity System
- Help Desk System

Smart OIKN
- Data Sharing Platform
- OIKN Office Management System
- Learning Management System for OIKN
- Smart App for OIKN

City Management & Planning Service
- Integrated Command Control Center (ICCC)
- Centralized Citizen Reporting System
- Urban Planning System

Smart Business Permit
- Smart Permit System

Living

Public Safety & Space Management
- Urban Safety & Mobility System
- Emergency Response Management System
- Early Warning System
- Smart Spaces Ssytem

Health & Welfare
- Integrated Health App
- Smart Healthcare System
- Smart Occupational Safety System

Natural Resources and Energy

Energy Management and Digitalization
- Smart Grid System
- Smart Energy Market System
- Vehicle to X Ecosystems
- Storage Systems

Resource Management
- Smart Waste Management System
- Smart Water Management System
- Smart Wastewater Management System

Smart Forest and Green Management
- Smart Forest Fire Management System
- Smart Forest Biodiversity Monitoring System
- Carbon Stock and Emission Monitoring System
- Precision Farming System

Transportation & Mobility

Mobility as a Service
- Mobility as a Service Platform

Smart Logistics
- Smart Delivery System
- Smart Warehouse System

EV Ecosystem
- EV Charging for Public Commercial
- Battery Swapping for Public Commercial

Intelligent Transport System
- Advanced Traffic Management System (ATMS)
- Incident Management System (IMS)
- Autonomous Driving System (ADS)
- Advanced Public Transportation System (APTS)
- Advanced Traveler Information System (ATIS)
- Commercial Vehicle Operation System (CVOS)
- Electronic Payment System (EPS) for Mobility
- Advanced Parking Management System (APMS)

Built Environment & Infrastructure

Smart Building
- Resource System
- Access Control System
- Energy System
- Safety System
- Communication System
- Security System
- Lighting System
- Mobility System
- HVAC System

Smart Infrastructure
- Smart Infrastructure

Industry & Human Resource

Urban Citizen Living Lab
- Technology Demonstration Center
- Chemical and Pharmacy Center
- Equipment and Machinery Center
- Social Science Center

Smart Education
- Digital Library System
- Digital Classroom and e-learning System
- Student Admission System
- Integrated Education System

Smart Entertainment and Tourism
- Visitor Service App
- Smart Digital Museum
- Digital Entertainment and Creativity Center

Digital Platform for SMEs
- Digital Platform for SMEs

Smart Job Training and Matching
- Smart Job Training and Matching System

Integrated Digital Payment System
- Integrated Digital Payment System

Nusantara Smart City Technology

Telecommunication, Computation Center, High Performance Computing, Integrated Command and Control Center, Cyber Security, Smart Grid, API Gateway "Satu Nusantara" technology diagram panels with Smart Grid, Smart Pole IoT, and Autonomous Driving annotations.

Teknologi Pendukung Kota Cerdas Nusantara

Internet of Things | Autonomous Driving | Unmanned Aerial Vehicle (UAV) | Interactive Display | Smart Pole | Artificial Intelligence

Digital Twin | Computer Vision | Geo-Analytics | Teknologi Biometrik | Blockchain | NLP, Pengenalan Suara dan Asisten Suara

Robotic Process Automation | Extended Reality | Vehicle to X | Bioteknologi

Smart Grid
Smart Pole
IoT
Autonomous Driving

Investment Package 2024 - 2030

1 ICCC	2 CCTV	3 INTEGRATED PAYMENT SYSTEM	21 DATA CENTER
PHARMACY CENTER	SEMICONDUCTOR CENTER	SMART BUILDING	20 SMART POLE
SMART PARKING	22 UAV	AUTONOMOUS VEHICLE	4 EV CHARGING

INVESTMENT CATEGORY

- ACCESS & DATA HUB
- LIVING & WELL-BEING
- BUILDING & INDUSTRY
- ENERGY & ENVIRONMENT
- TRANSPORTATION
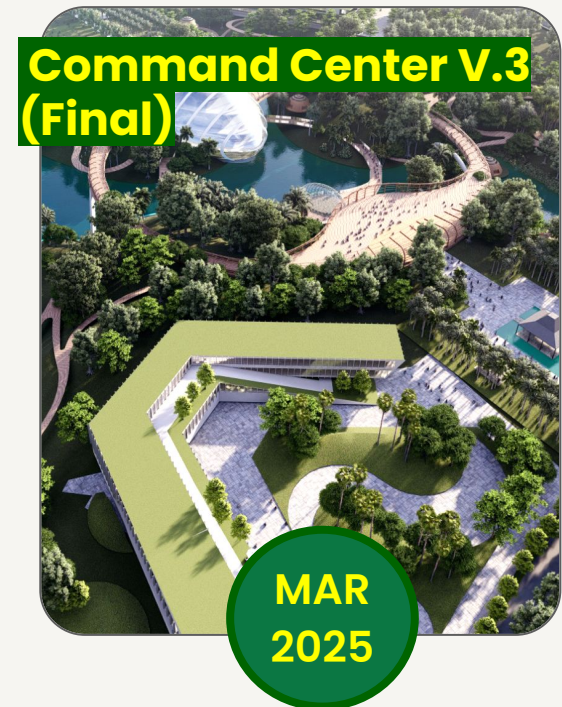
13 SMART LIVING	14 SMART CULTURE	15 TECHNO HOUSE	6 SMART LOCKER	8 SMART DISPLAY	7 SMART HEALTH
5 SMART ENERGY	24 SMART GRID	9 SMART WASTE	10 SMART WATER	11 SMART FOREST	12 SMART ENVIRONMENT

Nusantara Command Center(NCC) Development Plan

NUSANTARA

Command Center V.1

FEB 2024

Construction Worker Housing (HPK)

Command Center V.2

JUL 2024

Coordinating Ministry Office (Kemenko)

Command Center V.3 (Final)

MAR 2025

OIKN Main Headquarter

Definition and Scope of Command Center

The Nusantara Command Center is a monitoring and control service for the Indonesian smart city based on big data and computer vision technology utilizing CCTV-based monitoring and monitoring technology, as well as optimizing digital services for IKN citizens

Supervision and Monitoring of the Development of Nusantara

Monitoring the location and development of the Indonesian Capital City via CCTV to provide appropriate responses.

Big Data Analysis of Development and Operations of the Nusantara
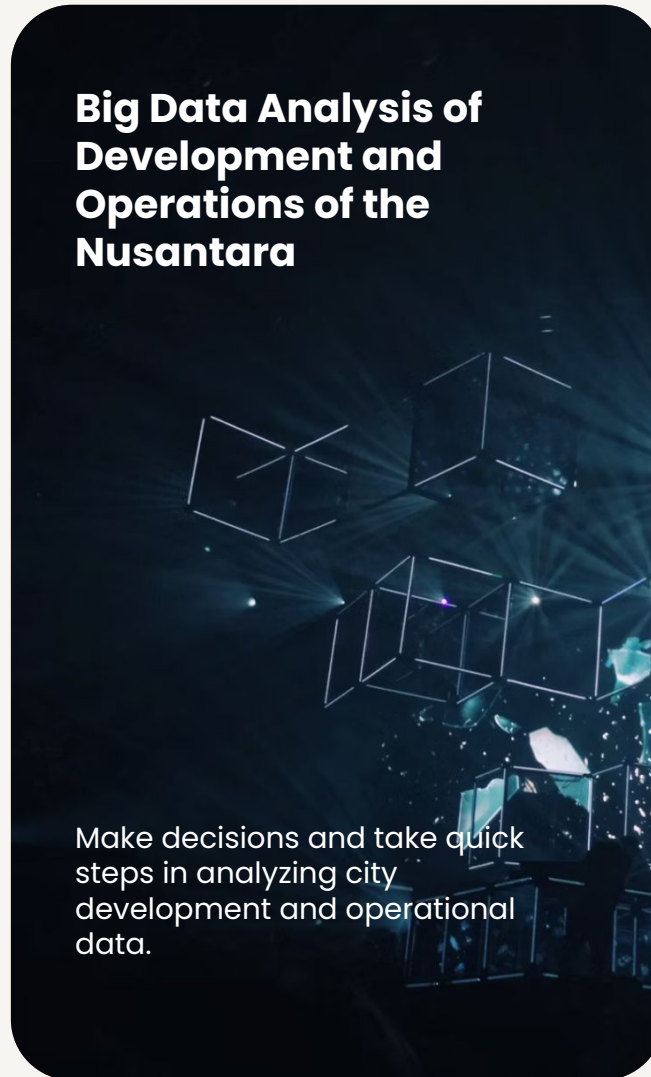
Make decisions and take quick steps in analyzing city development and operational data.

Monitoring Development and Operational Participation Data

Monitoring data related to the development of the Nusantara Capital City Authority, such as investment, development input, and others

Command Center Benefits for IKN

NUSANTARA

Improvement of Public Services

By connecting smart features such as citizen reporting systems, traffic management, and integrated health systems, the Command Center plays a role in improving the efficiency of public services, quality of life for citizens, and environmental sustainability.

City Operational Optimization

Supports city operations through monitoring of facilities and infrastructure, emergency crisis management, and analytical centers, ensuring fast and accurate responses in critical situations.

Integration and Flexibility

Designed to meet aspects of reliability, flexibility, and scalability, the Command Center enables the integration of interconnected technologies, adapts to evolving needs, and supports future technology expansion.

Principles of Command Center Planning
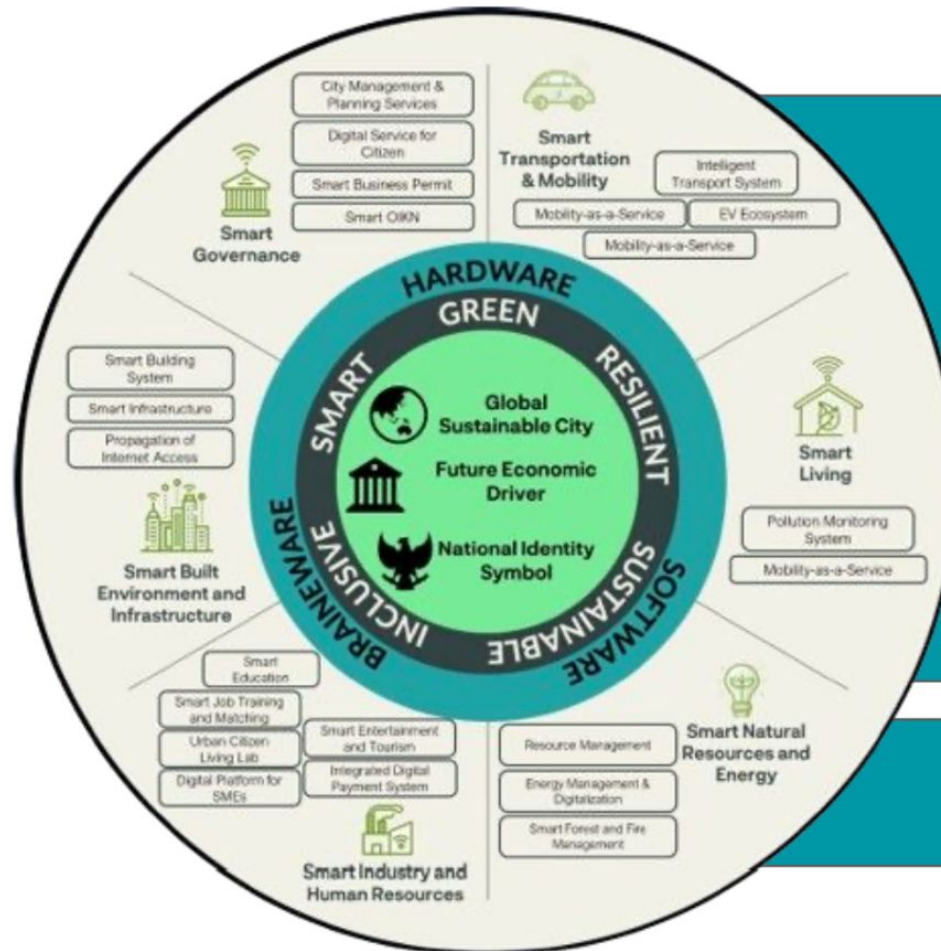
Reliable: Nusantara Command Center that will be built at IKN must be reliable to achieve its mission of supporting city operations, including monitoring facilities and infrastructure, emergency crisis management and an analytical center.

Flexible : The Command Center must be flexible enough to accommodate unexpected conditions that arise during an emergency. Systems and spaces must be able to adapt to new users, unexpected circumstances, and extremely high loads

Scalable: The Command Center must be able to develop and support existing technology

About the Nusantara Command Center

NUSANTARA
Ibu Kota Negara
Indonesia

What is Nusantara Command Center?

Nusantara Command Center is an urban service technology system through efficient integration and monitoring.

This system combines a CCTV video system for security and traffic monitoring, coordinates emergency services and public complaints for rapid response in emergency situations, and integrates social and economic services to support the growth and prosperity of the entire IKN community

Emergency and Crisis Management

Integrated digital public contact service for incidents and emergencies (BSSN, BMKG, Basarnas)

Security and Surveillance

Monitoring roads and public places in real time and connecting with relevant authorities (Polri, TNI, etc.)

Monitoring all IKN public facilities

Visibility to the surrounding environment and integration with energy and public services

Analytics Goals Dashboard

Digital Twin for development analysis and potential risks that may occur in the IKN area

Command Center V.1

Version I - Construction Worker Housing (HPK)

Command Center V.1

FEB 2024

Completion of Command Center V.1

Floor Plan of ICCC
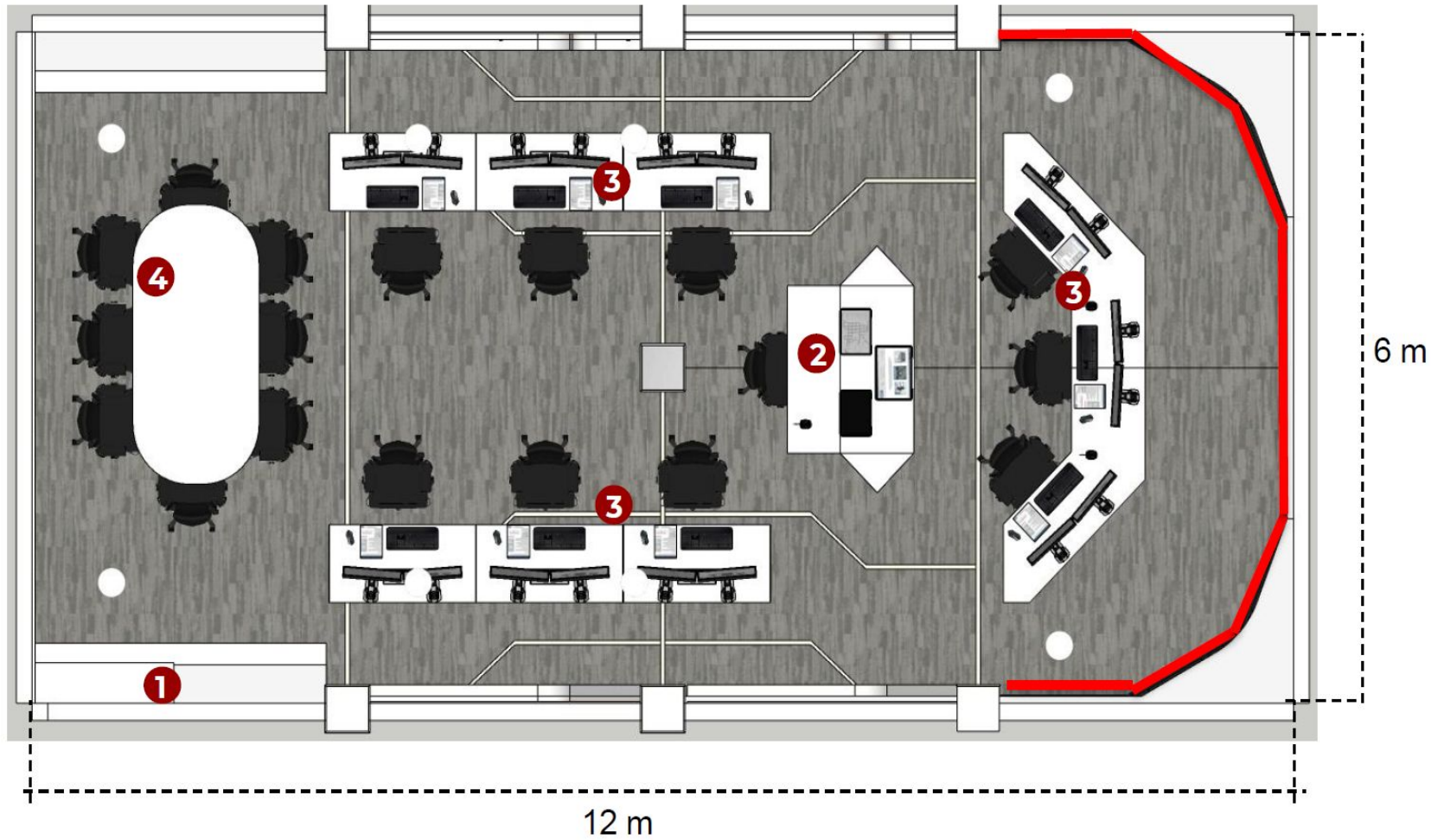
NUSANTARA

Legend:

1. Main Entry
2. President Area
3. Control Area
4. Meeting Area

Remarks:

——— : LED TV

6 m

12 m

Gallery Command Center V.1
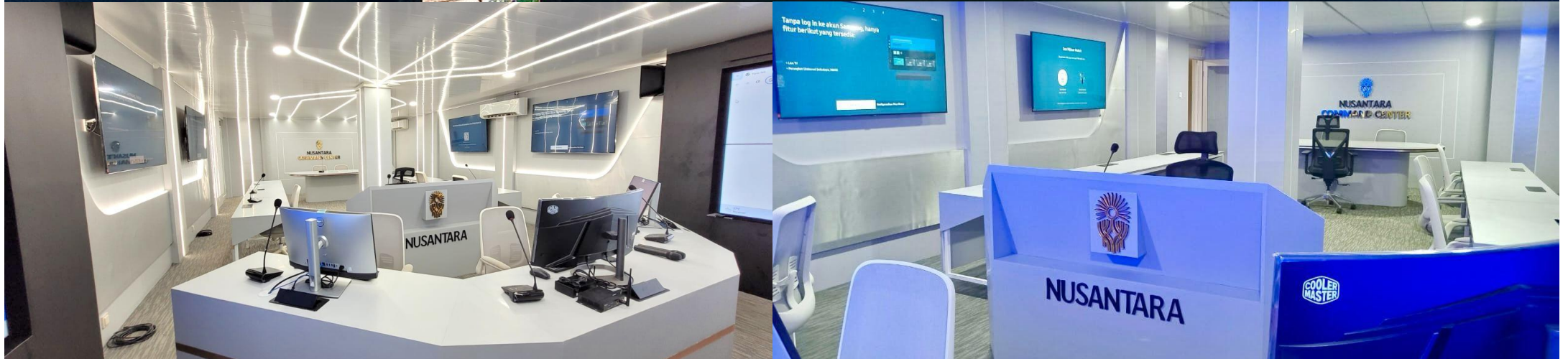
Nusantara Command Center Phase 1
Data and Services Integration Center

Operation Room's Video Wall

Mobile

OIKN

PUPR

Contractor

Other Parties

Live Monitoring

Monitoring APBN Project Progress

Monitoring Progress Investment

Project Issue List

Monitoring Media

NUSANTARA

Grand Design Nusantara Command Center

NUSANTARA

Data Sources

OIKN

Development Plan Data

Development Status Data

Data CCTV

Spatial Data

Investment Data

Reporting Data / Social Media

Command Center Digital Operation

MONITORING DASHBOARD

Development Achievements

Monitoring Visual

Data analysis
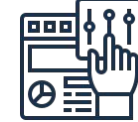
Control Management

TEAM

ICCC Manager

ICCC Officer

Reporting Officer

ACTIVITY

24/7 Monitoring

Analysis and Research

Reporting

FACILITIES

- Interactive Flat Display
- Video Wall Seamless
- Video Conference

Services

REAL TIME MONITORING

Desktop Device

Tab Device

Mobile Device

ANALYSIS & REPORTING

- Traffic Conversation
- Sentiment Analysis
- Engagement Analysis
- Influencer Identification
- Geo Location Based Analysis
- Social Network Analysis, etc.
- Daily, Weekly, Monthly, Annual, ad hoc report, etc.

CRISIS MANAGEMENT ALERT

- Immediate alerts when certain conditions are encountered
- Verify alerts and short Summary from Analyst
- Sending warnings in the form of notifications

Nusantara Control Center Basic Workflow

NUSANTARA

User

Users contact / are contacted by the contact center to provide information or complaints

Channels

- Social Media
- Hotline Center
- Smart App
- Email
- Website
- Emergency Button
- Chatbot

Users use one of the available channels

Frontline can provide input and see the current situation of the case to find answers to user questions

Real Time Monitoring Performance and Dashboard

Dashboard Reporting

All interaction traffic, service performance and regular reporting

Analytical Process

The analytical process is carried out by a team of analysts and reporting can then be presented in the form of reports and automatic dashboards to be submitted to decision makers

Layer 1 : Frontline

If the case does not require escalation, then questions will be answered directly by the frontline

Case progress can be reported by Backline whether it has been solved or not

Ticketing Omnichannel

Related K/L

OIKN

Layer 2 : Backline
If the case requires escalation, the ticket will be dispatched to the PIC backroom for processing

Decision Making

Decision Maker makes decisions for the development of public services

Nusantara Control Center Contents List
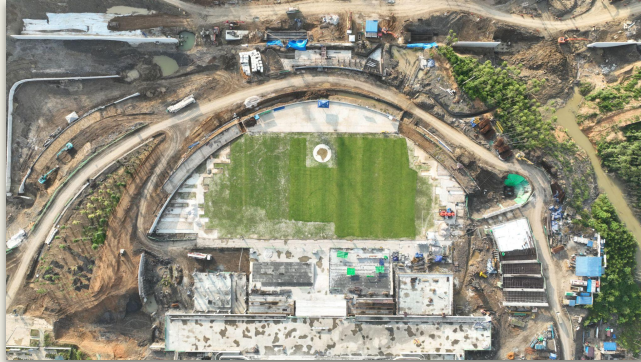
Live Progress
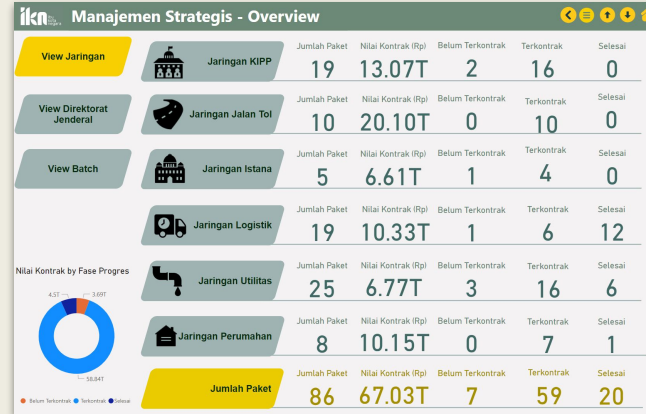
Project Overview

Cost Progression

List of Issues

The Number of Workers

Fleet Management
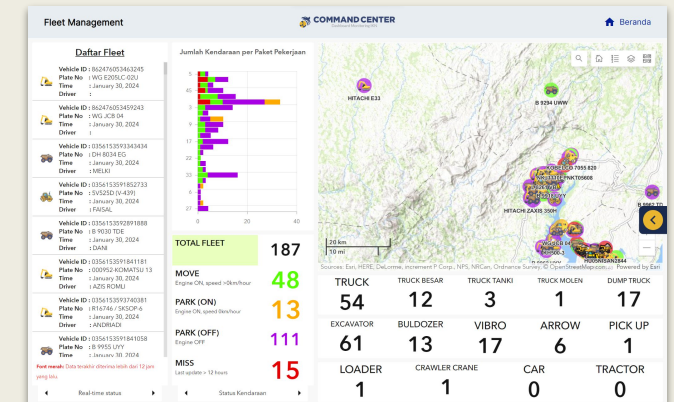
Nusantara Command Center Phase 1
Dashboard Snapshot

NUSANTARA

Dashboard Utama

Dashboard Media
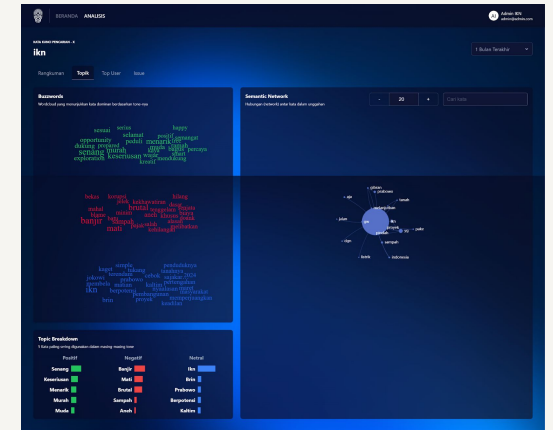
Dashboard Fleet PU
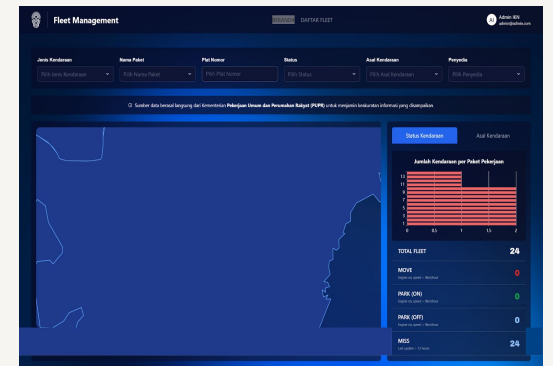
Nusantara Command Center Phase 1
Dashboard Snapshot

NUSANTARA

Dashboard Pekerja PU
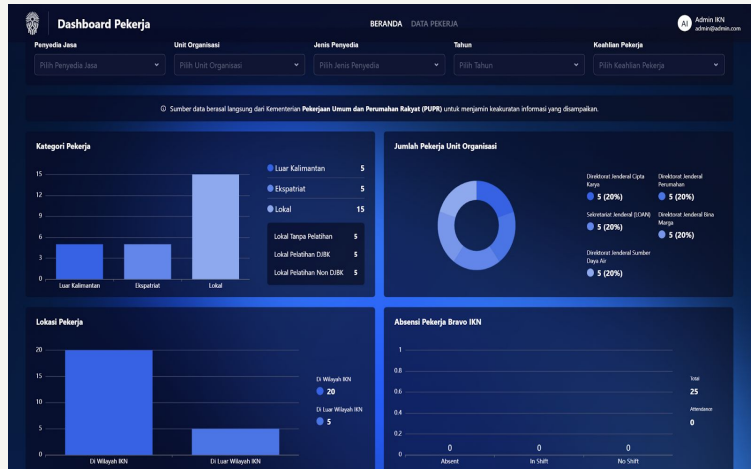
Dashboard LoI Invest

Video Conference

Project Monitoring

Geospatial Platform
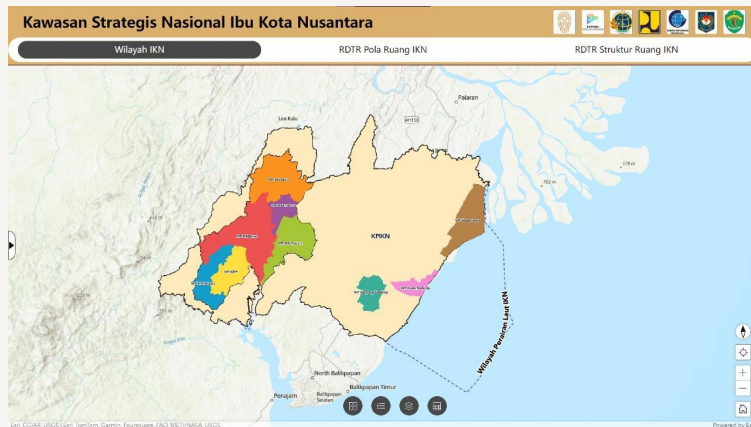
Montara
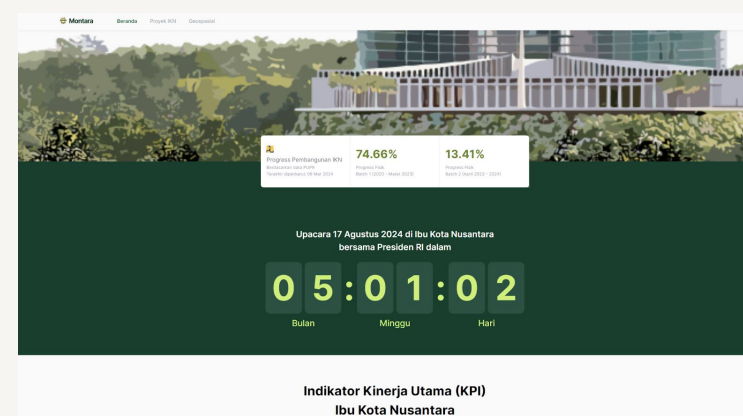
NUSANTARA

Command Center V.2

Coordinating Ministry Office (Kemenko)

LAYOUT PLAN

Command Center V.2

JUL 2024

Nusantara Command Center(NCC) Development Plan

NUSANTARA

Command Center V.1

FEB 2024

Command Center V.2

JUL 2024

Command Center V.3 (Final)

MAR 2025
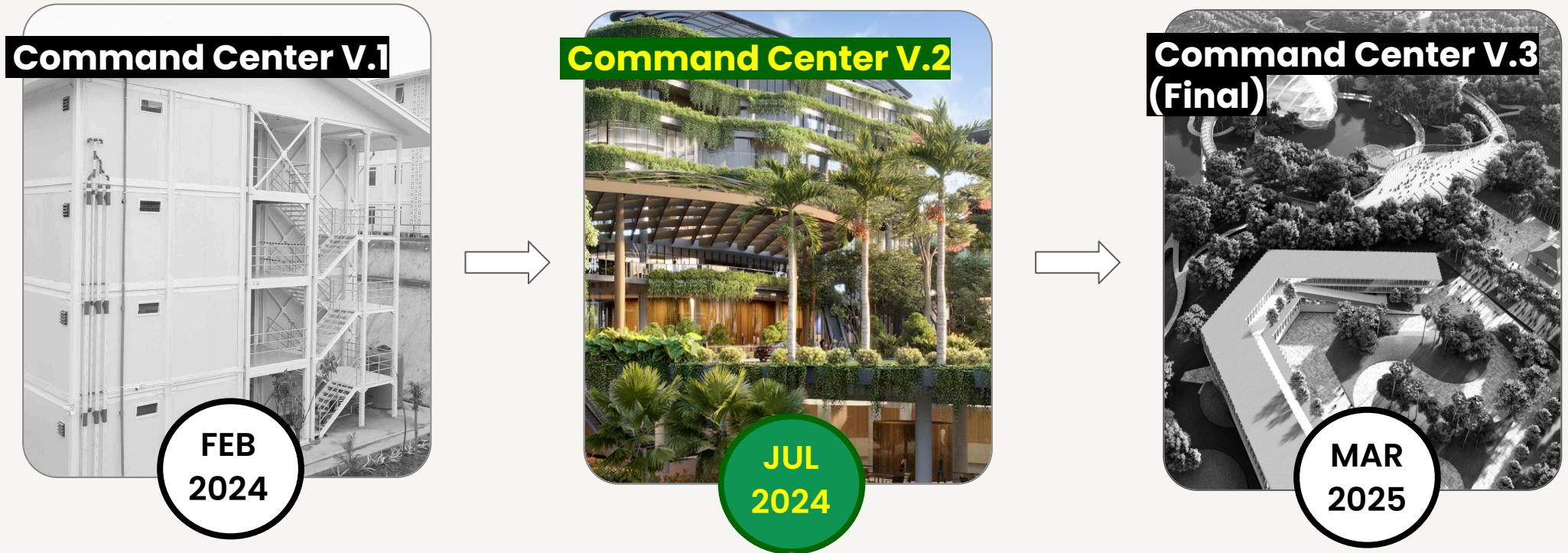
Objective: To support the flag ceremony activities which will be held on the Republic of Indonesia's Independence Day on 17 August 2024 at WP IKN, a more capable CC is needed as a showcase for more comprehensive and future-proof digital infrastructure development.

Hardware Specs

A. Display & Perangkat Pendukung Command Centre

No	Keterangan	Qty	
1	LCD Video Wall 1.8mm 500nits	27	Unit
2	Bracket Video Wall	27	Unit
3	Chasiss Video Wall Controller	1	Unit
4	Quad Channel HDMI Input Card	3	Unit
5	Quad Channel HDMI Output Card	8	Unit
6	Preview Card	1	Unit
7	Kabel HDMI 10M	6	Unit
8	Kabel HDMI 15m	16	Unit
9	AIO Computer	10	Unit
10	Camera Video Conferences	1	Unit
11	Pengiriman Barang JKT-IKN	1	Ls

B. Pengadaan Perangkat Control AV

No	Keterangan	Qty	
1	AMX Wallmount Touch Panel	1	Unit
2	DVX-2265-4K-TAA 6X2 ALL IN ONE 4K60	1	Unit
3	PR-WP-412	1	Unit
4	JPK-1300	1	Unit

C. Pengadaan Perangkat Speaker & Miccrophone System

No	Keterangan	Qty	
1	Control Host AM-5000M	1	Unit
2	Microphone Chairman	2	Unit
3	Microphone Delegate AM-5000D	12	Unit
4	Wireless Conference System infrared AM-5000R	1	Unit
5	Charger Pack AM-5000P	1	Unit
6	Battery Base Chairman AM-5000BC	2	Unit
7	Battery Base Delegate AM-5000BD	1	Unit
8	Ceiling Speaker AC-A601	8	Unit
9	Ceiling Subwoofer AC-S601	4	Unit
10	Mixer Amplifier MA600U	1	Unit

D. Power Backup & Pendingin & Elektrikal Command Centre

No	Keterangan	Qty	
1	UPS 20 KVA	1	Unit
2	AC	2	Unit
3	Pipa AC & Kelengkapan Material Installasi	2	Ls
4	Power / Panel Induk Command Centre	1	Ls

E. Interior

No	Keterangan	Qty	
1	Backdrop Video Wall & Dinding Dengan Perendam Suara	200	M2

F. Instalasi Perangkat Command Centre

No	Keterangan	Qty	
1	Installasi Video Wall & Konfigurasi & Setting	27	Unit
2	Installasi Audio System & Konfigurasi	1	Ls
3	Installasi AC 5PK	2	Unit
4	Installasi & Konfigurasi UPS 20KVA	1	Unit
5	Programming & Setting Control System AV	1	Ls

Notes: *Requirements above are indicative and prospective investors/consortiums may propose recommendations that's considered more strategic on their Feasibility Study for PoC*

NUSANTARA

Command Center V.3 (Final)

LAYOUT PLAN

Located at OIKN's Main Headquarter

Command Center V.3

MAR 2025

Nusantara Command Center(NCC) Development Plan

NUSANTARA

Command Center V.1

FEB 2024

Construction Worker Housing (HPK)

Command Center V.2

JUL 2024

Coordinating Ministry Office (Kemenko)

Command Center V.3 (Final)

MAR 2025

OIKN Main Headquarter

Technology Architecture

Applications and Devices Layer

Audio
- Public Announcement
- Public Call Center

Video
- System Surveillance Camera
- Variable Messaging Display

Sound
- Emergency Panic Button
- Smartphone App

Sensing
- Environmental Sensors
- Utility Sensors (Water, energy. etc)

Crowdsource
- Wi-Fi Hotspots
- Social Media Info Loop

Integration Layer
- Application Programming Interface
- Webservices
- Software Development Kit
- Databases

Platform and Analytics
- Command Center Platform
- Data Analytics
- Artificial Intelligence
- Video Analytics
- Predictive Analysis

Integrated Control Center
- Interactive Digital Wall
- Operators Computer Terminal Area
- Situation Room
- Local Server Room

Proof of Concept Requirements

PoC System Minimum Functional Requirements

FEATURES	Integrated Command Control Center (ICCC)
FUNCTIONAL REQUIREMENT	• **Emergency and Crisis Management** ○ ICCC administrators will **receive alerts from IKN citizen's 'emergency button' and response accordingly** ○ ICCC administrators will act as **one stop digital public contact service for incidents and emergencies**, and take necessary actions with respective relevant parties in dispatch response ○ ICCC administrators will **receive public safety and natural disaster warnings from relevant parties** and relay these information to IKN citizens • **Safety and Surveillance** ○ ICCC administrators can **monitor roads and public places in real time** ○ ICCC administrators will be connected **with relevant parties for safety & security (e.g., POLRI, TNI, firefighter**) as part of communication chain for emergency and crisis management	• **Ability to monitor of all IKN public facilities, services, and infrastructure** ○ ICCC administrators can **monitor the mobility of citizens** and ensure smooth traffic/commute, integrated with Intelligent Transport System command center ○ ICCC administrators can **monitor congestion or crowd levels,** and share alert to citizens through IKN Smart City App, integrated with Intelligent Transport System command center ○ ICCC administrators have **visibility on surrounding environmental** (pollution levels, weather, humidity, temperature, etc.) and **biodiversity** conditions ○ ICCC administrators can **monitor public utilities** (e.g., water, gas, solid waster, sewerage & drainage, roads, streetlights) conditions, integrated with energy and water command centers • **Analytic Purposes** ○ ICCC administrators can use **digital twin** for analytics on development and potential risk that can happen to related building/roads ○ ICCC administrators have **information on hospitals, disease control and prevention,** integrated with help desk ○ ICCC administrators **can monitor staple food supply prices and inflation** to be used for food security planning **References**: Synergy, Portugal

***Notes**: Requirements above are indicative and prospective investors/consortiums may propose recommendations that's considered more strategic on their Feasibility Study for PoC*

Room Details and Area Requirement

#	Room Name	Total Room	Remarks	Metrics	Area (m2)	Total area (m2)
1	Main Command Center + Operation Room	1	1	room	500.00	500.00
2	Control Center Room	1	1	room	40.00	40.00
3	Discussion Room	3	1	room	40.00	120.00
4	UPS and Electric Room	1	1	room	120.00	120.00
5	Crisis Center / War Room	1	1	room	90.00	90.00
	Total staff			Effective Area	Sub-Total	870.00
				% Circulation + SP/ME	25%	217.50
				Total GFA		**1087.50**

Requirement (1/2)

Ruang War Room

No.	Keterangan	Vol	Satuan
1	Profesional Monitor	1	unit
2	3D LED Hologram Table	1	unit
3	Conference Host	1	unit
4	Network Chairman Unit	2	unit
5	Network Delegate Unit	18	unit
6	8" Full Range Speaker	2	unit
7	Power Amplifier	1	unit
8	8-channel Audio Mixer	1	unit
9	FHD AV KVM Over IP NPL Series	2	unit
10	Intelligent Recording Server	1	unit
11	7" Touch Control Processor	1	unit
12	HDMI Splitter 1in 2out	1	unit
13	HDMI Capture Card	1	unit
14	Intelligent Conference Camera	1	unit
15	Network Switch	1	unit
16	USB Soundcard	1	unit

Ruang Rapat Pimpinan

No.	Keterangan	Vol	Satuan
1	136" All in One LED	1	unit
2	Conference Host	1	unit
3	Network Chairman Unit	2	unit
4	Network Delegate Unit	18	unit
5	Intelligent Conference Camera	1	unit
6	8" Full Range Speaker	2	unit
7	Power Amplifier	1	unit
8	8-channel Audio Mixer	1	unit
9	FHD AV KVM Over IP NPL Series	1	unit
10	Intelligent Recording Server	1	unit
11	7" Touch Control Processor	1	unit
12	HDMI Splitter 1in 2out	1	unit
13	HDMI Capture Card	1	unit
15	Network Switch	1	unit
16	USB Soundcard	1	unit

Ruang Diskusi 1 Selatan

No.	Keterangan	Vol	Satuan
1	86" Interactive Flat Panel	1	unit
2	Open Plugable Slot	1	unit
3	FHD AV KVM Over IP NPL Series	1	unit
4	HDMI Splitter 1in 2out	1	unit
5	HDMI Capture Card	1	unit
6	Network Switch	1	unit

Ruang Diskusi 2 Selatan

No.	Keterangan	Vol	Satuan
1	86" Interactive Flat Panel	1	unit
2	Open Plugable Slot	1	unit
3	FHD AV KVM Over IP NPL Series	1	unit
4	HDMI Splitter 1in 2out	1	unit
5	HDMI Capture Card	1	unit
6	Network Switch	1	unit

Ruang Diskusi 1 Utara

No.	Keterangan	Vol	Satuan
1	65" Interactive Flat Panel	1	unit
2	Open Plugable Slot	1	unit
3	FHD AV KVM Over IP NPL Series	1	unit
4	HDMI Splitter 1in 2out	1	unit
5	HDMI Capture Card	1	unit
6	Network Switch	1	unit

Ruang Diskusi 2 Utara

No.	Keterangan	Vol	Satuan
1	65" Interactive Flat Panel	1	unit
2	Open Plugable Slot	1	unit
3	FHD AV KVM Over IP NPL Series	1	unit
4	HDMI Splitter 1in 2out	1	unit
5	HDMI Capture Card	1	unit
6	Network Switch	1	unit

Notes: *Requirements above are indicative and prospective investors/consortiums may propose recommendations that's considered more strategic on their Feasibility Study for PoC*

Requirement (2/2)

Ruang Media

No.	Keterangan	Vol	Satuan
1	65" Interactive Flat Panel	1	unit
2	Open Plugable Slot	1	unit
3	FHD AV KVM Over IP NPL Series	1	unit
4	HDMI Splitter 1in 2out	1	unit
5	HDMI Capture Card	1	unit
6	Network Switch	1	unit

Ruang Command Center

No.	Keterangan	Vol	Satuan
1	Backlight LED Video Wall 55"	48	unit
2	Backlight LED Video Wall 55"	4	unit
3	Front Access Bracket	48	unit
4	FHD AV KVM Over IP NPL Series	48	unit
5	FHD AV KVM Over IP NPL Series (*back-up unit*)	4	unit
6	4K AV KVM Over IP NPL Series	95	unit
7	4K AV KVM Over IP NPL Series (*back-up unit*)	8	unit
8	Core PC with Quad 4K HDMI Output Card	9	unit
9	Core PC with Dual 4K HDMI Output Card	4	unit
11	4K Monitor Operator 49"	16	unit
12	Monitor Commander 32"	3	unit
13	Tablet	20	unit
14	4K Webcam Camera	1	unit
15	Full-range Point-source Coloum Speaker	2	unit
16	LF Modular Line-source Bass Coloum	2	unit
17	Amplified Controller	1	unit
18	1-phase Power Sequential	1	unit
19	2-channel Wireless Microphone	1	unit
20	32-channel Mixer	1	unit
21	4-ports 78K Rhodium A/C Line Filter	1	unit
22	Speaker Cable	2	rol
23	Audio Cable	1	rol
24	305m Unikat Cable	7	rol
25	Rack Server	2	unit

Ruang Monitoring CCTV

No.	Keterangan	Vol	Satuan
1	Backlight LED Video Wall 55"	22	unit
2	Backlight LED Video Wall 55" (*back-up unit*)	4	unit
3	Front Access Bracket	22	unit
4	FHD AV KVM Over IP NPL Series	22	unit
5	4K AV KVM Over IP NPL Series	8	unit
6	4K Monitor Operator 32"	8	unit
7	Network Switch	1	unit

Ruang Auditorium

No.	Keterangan	Vol	Satuan
1	Indoor LED	1	set
	Pixel pitch: P2.5		
	Screen size: 768x336cm		
	Total resolutions: 3072x1344 pixels		
2	LED Processor	2	unit
3	FHD AV KVM Over IP NPL Series	3	unit
4	4K AV KVM Over IP NPL Series	1	unit
5	Network Switch	1	unit
6	Intelligent Recording Server	1	unit
7	Open Plugable Slot	1	unit
8	Micro Line-array Speaker Systems	6	unit
9	Micro Line-array Bass Systems 12"	2	unit
10	Flying/ Stacking Grid	2	unit
11	Amplified Controller	1	unit
12	1-phase Power Sequential	1	unit
13	2-channel Wireless Microphone	1	unit
14	32-channel Mixer	1	unit
15	4-ports 78K Rhodium A/C Line Filter	1	unit
16	Audio Cable	1	rol
17	Speaker Cable	2	rol

Supporting Requirements

No.	Keterangan	Vol	Satuan
1	Network Video Recorder	18	Set
2	Network Video Recorder AI	2	Set
3	Storage	160	Set
4	Varifocal Camera	48	Set
5	PTZ Camera	2	Set
6	Network Cable	40	Roll
7	Switch Hub PoE	14	Set
8	Accessories	1	Lot
9	Joystick	4	Set
10	Video Management System	1	Lot
11	Firewall	1	Lot
12	Gateway	1	Set
13	Core Switch	1	Unit
14	Network Access Controller	1	Unit
15	Wireless Access Point	27	unit
16	Power Adaptor	2	unit
17	Lisence	27	Lisence
18	Lisence	27	Lisence
19	Lisence	1	Lisence
20	Network Cable	15	Roll
21	Accessories	1	Lot
22	Controller Core	10	unit
23	Lisence	1	unit
24	Reader Access	27	unit
25	Box Enclosure	37	unit
26	Exit Button	27	unit
27	Lock	27	unit
28	Door Sensor	27	unit
29	Emergency Door Release	27	unit
30	Battery	27	unit
31	Door Module	27	unit

Proof of Concept Requirements

PoC System Minimum Functional Requirements

FEATURES	1.1.1 Integrated Command Control Center (ICCC)	

FUNCTIONAL REQUIREMENT	• **Emergency and Crisis Management**
	  o ICCC administrators will **receive alerts from IKN citizen's 'emergency button' and response accordingly**
	  o ICCC administrators will act as **one stop digital public contact service for incidents and emergencies**, and take necessary actions with respective relevant parties in dispatch response
	  o ICCC administrators will **receive public safety and natural disaster warnings from relevant parties** and relay these information to IKN citizens
	
	• **Safety and Surveillance**
	  o ICCC administrators can **monitor roads and public places in real time**
	  o ICCC administrators will be connected **with relevant parties for safety & security (e.g., POLRI, TNI, firefighter)** as part of communication chain for emergency and crisis management
		• **Ability to monitor of all IKN public facilities, services, and infrastructure**
		  o ICCC administrators can **monitor the mobility of citizens** and ensure smooth traffic/commute, integrated with Intelligent Transport System command center
		  o ICCC administrators can **monitor congestion or crowd levels,** and share alert to citizens through IKN Smart City App, integrated with Intelligent Transport System command center
		  o ICCC administrators have **visibility on surrounding environmental** (pollution levels, weather, humidity, temperature, etc.) and **biodiversity** conditions
		  o ICCC administrators can **monitor public utilities** (e.g., water, gas, solid waster, sewerage & drainage, roads, streetlights) conditions, integrated with energy and water command centers
		
		• **Analytic Purposes**
		  o ICCC administrators can use **digital twin** for analytics on development and potential risk that can happen to related building/roads
		  o ICCC administrators have **information on hospitals, disease control and prevention,** integrated with help desk
		  o ICCC administrators **can monitor staple food supply prices and inflation** to be used for food security planning
		    References: Synergy, Portugal	

Notes: *Requirements above are indicative and prospective investors/consortiums may propose recommendations that's considered more strategic on their Feasibility Study for PoC*

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