VISION

Overall Strategies

Human Resource

- Air Traffic Control and Danger. Prohibited and Restricted Airspace Information Training/Seminars
- Unmanned vehicle and systems design training with simulations
- Training for flight control and ground control system software programming
- Operations and maintenance training

R&D Technologies

- Unmanned Vehicle Systems Platform Design and Development
- UVS Enhanced Capabilities. Functionalities and Applications
- Communications Security

Facilities / Services

- Simulation, modelling, and system programming laboratory
- Fabrication and Maintenance, repair and overhaul (MRO) facility for UVS parts and components
- Indoor and outdoor (wind tunnel) facility for UVS flight/underwater tests
- UVS Data Center

S&T Policies

- Frequency and bandwidth availability, link security, link ranges and network infrastructure for operational/mission support of UAS
- Standard reference or classification of categories for
- Airspace utilization, management, deconfliction and control
- UVS education/curriculum for Industry 4.0 development

10M

- UAV image processing techniques for infrastructure inspection
- Enhanced stabilization & protection of UVS in different payload orientations & maneuvers
- UVS-assisted water monitoring and sampling system

- UVS Design and Development
- UVS improved performance and characteristics

70M

- and water)
 - volcano monitorina . UVS with launch. landing and recovery
- and widened applications Safe and reliable UVS

2021

- Multi-mission UVS development (land, sea
- Development of UVS system intended for
- features:



UVS enhanced capabilities

MILESTONES

2023

capabilities and widened

Weather resistant/all

weather conditions UVS

Frequency Management

50M

Collaborative missions

Development of UVS

UVS secured systems

(resistance to hacking,

interception, jamming

of communications)

capacity platforms

Swarm intelligence

UVS enhanced

. UVS Traffic and

communication]

(Data transfer and

applications

High payload

(air, land, water)

communication

architecture

POSSIBLE SOLUTIONS

20M

- Development of UVS smart systems (autonomy and strategic navigation, Intelligent Autopilot System (IAS)
- Application of new/innovative material and energy sources for
- Swarm intelligence UVS with computer vision and has airspace/environmental awareness
 - 2024
 - . UVS Traffic Management (Data transfer and communication) High levels of UVS safety, performance,

efficiency, capability,

resilience and autonomy

20M

- . Development of UVS smart systems (autonomy and strategic navigation, Intelligent Autopilot System (IAS)
- Application and integration of Internet of Things (IoT) and robotics
- Establishment of UVS R&D Center and Facility Establishment of UVS Consortium and Commercial Provider Partnership

30M

- R&D Center and Facilities
- databasé system

10M

2027

response, UVS

technologies

S&T Policy Support for

disaster assessment and

communications, etc.)

LGU adaptation of UVS

UVS (e.g., mapping,

- Establishment of UVS
- Development of UVS

2028

Sustainable UVS

Local Industry

Defense and

Human Security

- Support industry for UVS parts and components Local development of UVS software and hardware
- UVS Operations and Electronics Curriculum Developed

commercialization Overall Outcomes

Strengthened

on UVS design,

testing and simulation

Standard procedures

manufacture and testing

Decision support tools

for UVS operations and

2026

Human Resource

2025

High levels of UVS

safety, performance.

Utilization of UVS for

civilian and defense

applications

ficiency, capability,

resilience and autonomy

- Capacitated and new skills acquired on UVS design, development, operation, and maintenance
- Increased numbers of experts and researchers for UVS technology

R&D Technologies

 Cost-effective and commercially competitive UVS intended for high-end applications.

Facilities / Services

UVS network and inkages and established R&D facilities

S&T Policies

 Policy recommendations on UVS technology utilization and applications

NAST Foresight

- Long-term coastal and maritime ecosystem monitoring
- Al-enabled UVS for construction processes
- High Altitude Platform Systems
- Transportation and logistics

Thematic Areas

- Defense/Human Security
- Resilient Systems and Communities
- Industrial Applications
- Air, Water, Land UVS technology



DEPARTMENT OF SCIENCE AND TECHNOLOGY. PHILIPPINE COUNCIL FOR INDUSTRY, ENERGY. AND EMERGING TECHNOLOGY RESEARCH AND DEVELOPMENT (DOST-PCIEERD)

