# GUTMA
# Global UTM Ecosystems' Readiness Index 2024

Global UTM Association

European Network of U-Space Stakeholders Meeting
31st January, 2025

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# We defined fundamental UTM ecosystem's dimensions

## GUTMA Task Force's Methodology powered by pwc

### Legislation 1

How developed is the **regulatory framework concerning UAS operations or UTM** relating to operational, as well as technical, governance and economical aspects?

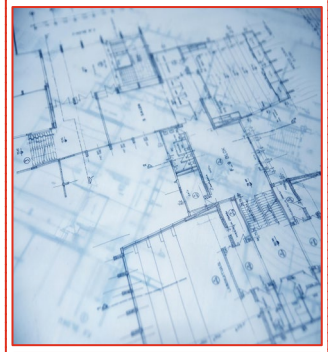
### Governance 2

How diverse is the **collaboration between public and private stakeholders** in UTM ecosystem decision-making (such as structure, roles, financing, etc.)?

### Strategy 3


Do the stakeholders have **clear visions, objectives and approaches, supported by a detailed strategic document**, to develop the UTM ecosystem?

### Operations 4

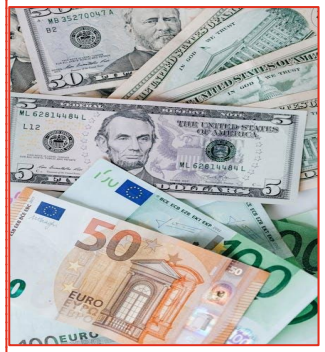


How designed are the **operational methods to enable and sustain the commercial and scalable BVLOS drone services** within the UTM ecosystem?

### Technology 5

What **operational UTM tools have been implemented to enable and sustain commercial and scalable BVLOS drone services** within the UTM ecosystem?

### Business & Market 6



What is the **maturity of stakeholders' economic understanding of the low-altitude economy** within the UTM ecosystem?

### Best practices

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**Identifying best practices to open commercial and scalable BVLOS drone services market**



Sources: PwC & PwC Strategy&

# The methodology defines clear maturity parameters for each identified dimension of the UTM ecosystem

## Global UTM Ecosystem's Readiness Index (simplified summary)

| Dimension/Index | 1. Nascent | 2. Emerging | 3. Developed | 4. Advanced | 5. Mature |
|---|---|---|---|---|---|
| Legislation | No basic UAS operations regulations. | Basic UAS operations regulations covering foundational aspects. | Nationally implemented UAS operations regulations; initial RTM framework released. | Advanced RTM regulations for commercial BVLOS operations. | Fully implemented UTM regulations aligned with international standards. |
| Governance | No public-private UAS operations/UTM collaboration. | UAS operations/UTM led by public sector with limited private sector involvement. | Active public-private collaboration on UAS operations/UTM decision making. | UTM governance structures defined and partially implemented. | UTM governance structures implemented with smooth collaboration between public-private stakeholders. |
| Strategy | No overarching strategic vision. | Organisational-level UAS operations/UTM strategies. | UAS operations/UTM national strategies supported by roadmaps. | UTM strategies pre-defined and aligned with aviation goals like the Advanced Air Mobility. | UTM strategies implemented and aligned with aviation and digitalisation goals. |
| Operations | No airspace structures segregation for UAS operations. | Traditional airspace structures segregation for UAS operations. | Implemented UAS operations airspace structures (e.g. geozones). | Segregated UTM airspace. | Seamless ATM/UTM airspaces integration. |
| Technology | No UAS operations/UTM tools or systems. | UAS operations foundational tool (e.g. geo-awareness website/mobile app). | Basic UTM system with foundational services (e.g. flight authorisation). | Advanced UTM system with advanced services (e.g. dynamic airspace management). | Seamless ATM/UTM systems integration. |
| Business and Market | No use of economic tools for low altitude economy. | Initial market analysis identifies demand. | High-level value chain mapping identifies services and costs/revenues. | End-level pricing strategy identifies services/ value. | Complete business plan ensures growth. |

Sources: PwC & GUTMA Task Force

# We came to the conclusions that most of dimensions have their unique regional leaders but the strategic and market-oriented approach requires improvement among all of the regions

## GUTMA Task Force's Global Conclusions

### Legislation 1

EU with its U-Space Regulations 2021/664-666 is leading in the **regulatory enablement of commercial and scalable BVLOS drone operations**, however with a slow progress in the national implementation.

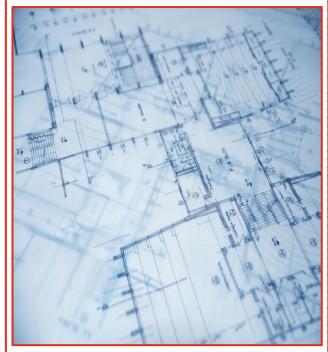
### Governance 2

Japan is a great example of developed **culture of cooperation between public** (ministries, CAAs, ANSPs) **and private** (associations, drone & UTM services companies, etc.) **stakeholders**.

### Strategy 3


There is a **lack of strategic documents at the organisational and national levels** addressing the UTM implementation/low-altitude economy with existing ones being often outdated.

### Operations 4

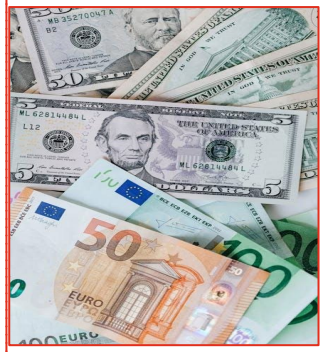


The implementation of drone (geo)zones is often related to the UTM technological advancement. US is leading in the **enablement of commercial and scalable BVLOS airspace implementations**.

### Technology 5

There are mostly **basic airspace (geo-)awareness tools** implemented, with **limited number of advanced UTM system implementations**.

### Business & Market 6



There is a **minor use of tools** (market sizing, value chain mapping, pricing strategies, business plans), and thus a **low economic understanding** of the low-altitude economy. Australia is a notable exception.

### Best practices

?

**Examples of diversified by geography and use-cases commercial and scalable BVLOS services, with the highlight of best practices**

Sources: GUTMA

# The global benchmarking enabled us to identify key success factors that contribute to the effective development of UTM ecosystems

## Global UTM Ecosystem Dimensions' Best Practices

| | | | |
|---|---|---|---|
| **Legislation** | **Harmonized UAS & UTM regulations** | U-Space is Europe's unified regulatory framework for safely integrating drones into airspace through digital and automated services | U-space |
| **Governance** | **Open discussion with the industry** | SUSI (Swiss U-Space Implementation) is a Swiss initiative uniting public and private stakeholders to integrate drones safely into airspace using advanced U-Space technologies and frameworks | SUSI SWISS U-SPACE IMPLEMENTATION |
| **Strategy** | **Strategy as a starting points** | ANSP Skeyes launched its larger-scale drone activities in 2018 with a comprehensive strategy focused on integrating drone operations, data analytics services, and drone detection and protection (ANSP and Brussels Airport Company JV SkeyDrone) | skeyes nice to guide you |
| **Operations** | **BVLOS operations deployment** | The FAA authorized multiple commercial drone operations in the Dallas area, allowing companies like Wing, DroneUp and Zipline to conduct package deliveries BVLOS without visual observers, deploying their own UTM technology to safely manage drone-to-drone interactions in shared airspace | Wing |
| **Business & Market** | **Market sizing for informed decision making** | Airservices Australia began with detailed market sizing, forming the basis for their pricing strategy, operating strategy, and business case for financing UTM development | airservices |
| **Technology** | — | **Advanced UTM systems beyond pure geo-awareness service** | In many countries and geographies advanced UTM systems have been already implemented, laying technological foundation for commercial BVLOS drone operations |

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Sources: GUTMA

# Our work allowed us to cover UTM ecosystems of nearly 70 countries and 7 geographical regions (1/3)

## Global UTM Ecosystems' Readiness Index 2024

### Europe (31)


Belgium (22/30)


Switzerland (20/30)


Italy (19/30)


Norway (19/30)


Spain (19/30)

### Asia (12)


China (22/30)


Japan (20/30)


India (18/30)


South Korea (18/30)

### MENA (9)


UAE (21/30)


Israel (20/30)


Saudi Arabia (18/30)

Sources: GUTMA

# Our work allowed us to cover UTM ecosystems of nearly 70 countries and 7 geographical regions (2/3)

## Global UTM Ecosystems' Readiness Index 2024

### Africa (6)


Kenya (17/30)


Nigeria (15/30)


Rwanda (15/20)

### South America (6)


Brazil (17/30)


Colombia (15/30)


Uruguay (14/30)

### North America (3) & Australia (2)


USA (22/30)


Australia (19/30)


Canada (21/30)

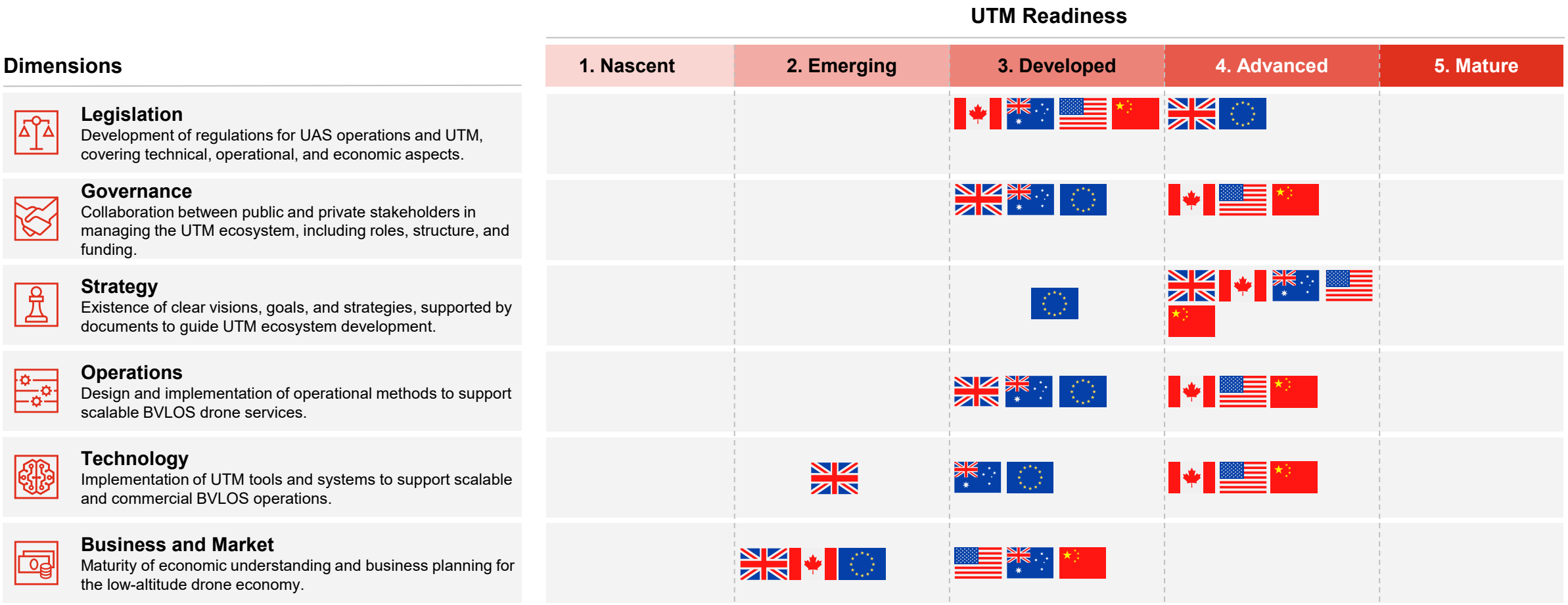

New Zealand (17/30)


Mexico (10/30)

Sources: GUTMA

# Our work allowed us to cover UTM ecosystems of nearly 70 countries and 7 geographical regions (3/3)

## Global UTM Ecosystems' Readiness Index 2024

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# Access the full report at www.gutma.org or by scanning the QR code for download

## Global UTM Ecosystems' Readiness Index 2024


QR code to download the GUTMA Global UTM Report

# Thank you


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