経済産業省

METI Industry Policy for the Defense Industrial Base

October 2024

Aerospace and Defense Industry Division,

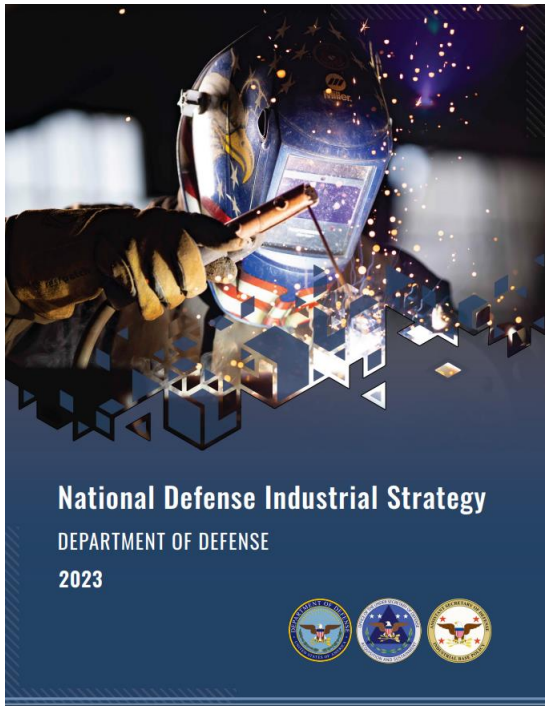
Manufacturing Industries Bureau,

Ministry of Economy, Trade and Industry (METI)

METI's perspective on Defense Industry and Commonalities with US NDIS

- The manufacturing base and technologies required in the defense industry are usually "dual-use" with other industrial sectors.
- From the perspective of METI, the resilient defense industrial base requires not only focusing on production and technological base exclusively for defense equipment but also involving a wide range of players.
- There are many common perspectives which are drawn in US NDIS.

＜National Defense Industrial Strategy of U.S. (2024.1)＞



- We **need to shift from policies** rooted in the 20th century **that supported a narrow defense industrial base**, capitalized on **the DoD as the monopsony power**, and promoted either/or **tradeoffs between cost, speed, and scale**.
- We need to **build a modernized industrial ecosystem** that includes the traditional defense contractors – the DIB primes and sub-tier defense contractors who provide equipment and services – and also **includes innovative new technology developers; academia; research labs; technical centers; manufacturing centers of excellence; service providers; government-owned, contractor-operated (GOCO) facilities; and finance streams, especially private equity and venture capital**.
- Accordingly, building a more robust, modernized defense industrial ecosystem will **require a dynamic effort across the U.S. government** to create the legal and policy conditions **that allow new entrants** into the defense production and services community.

(P.9 Introduction)

METI's Main Issues

Carbon Neutral/GX(Green Transformation)

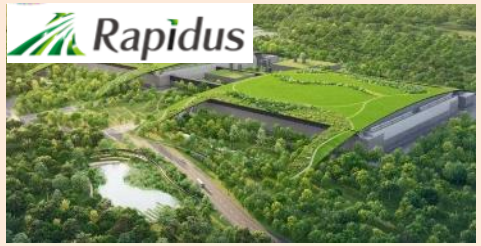
- The shift in the direction of nuclear power policy
- Manufacturing Process Transformation

etc.

Digital Transformation

- Next-generation Beyond 2nm Project
- R&D promotion and environmental improvement LLM/Generative AI

etc.



Resilient Supply Chain

- Enormous Support for strengthening the supply chain of critical items (investment in Japan and collaboration with Allied and like-minded Countries)

etc.

Startup Promotion

- ¥1 trillion($6.7 billion) for measures to support startups
- Select and support cutting-edge startups with innovative technologies.

etc.

J-Startup

JAPAN INVESTMENT CORPORATION

Today's Contents

1. **Civil-Defense Joint Supply Chain Resilience**
2. **Dual-use Innovation Promotion**
3. **Defense Industrial Collaboration with Allied and Like-minded Countries**

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Overview of ESPA

- With the increasing complexity of the global landscape and changes in the socio-economic structure, the GOJ has passed the Economic Security Promotion Act (ESPA) that formulates economic measures for the promotion of economic security in 2020.

0. General Provisions Including the Formulation of Basic Policy

1. Framework for Ensuring Stable Supply of critical items

2. System on Ensuring the Stable Provision of Essential Infrastructure Services

3. Framework for Enhancing Development of Advanced Critical Technologies

4. Non-Disclosure of Selected Patent Applications

Building a Resilient Supply Chain of Critical products

- The ESPA identifies 12 "specified critical products“.
- Strengthen the supply chain of specified critical products by providing support to private sector working to ensure their stable supply.
- A total budget 2bilion yen has been allocated to support capital investment and R&D for the 12 specified critical products

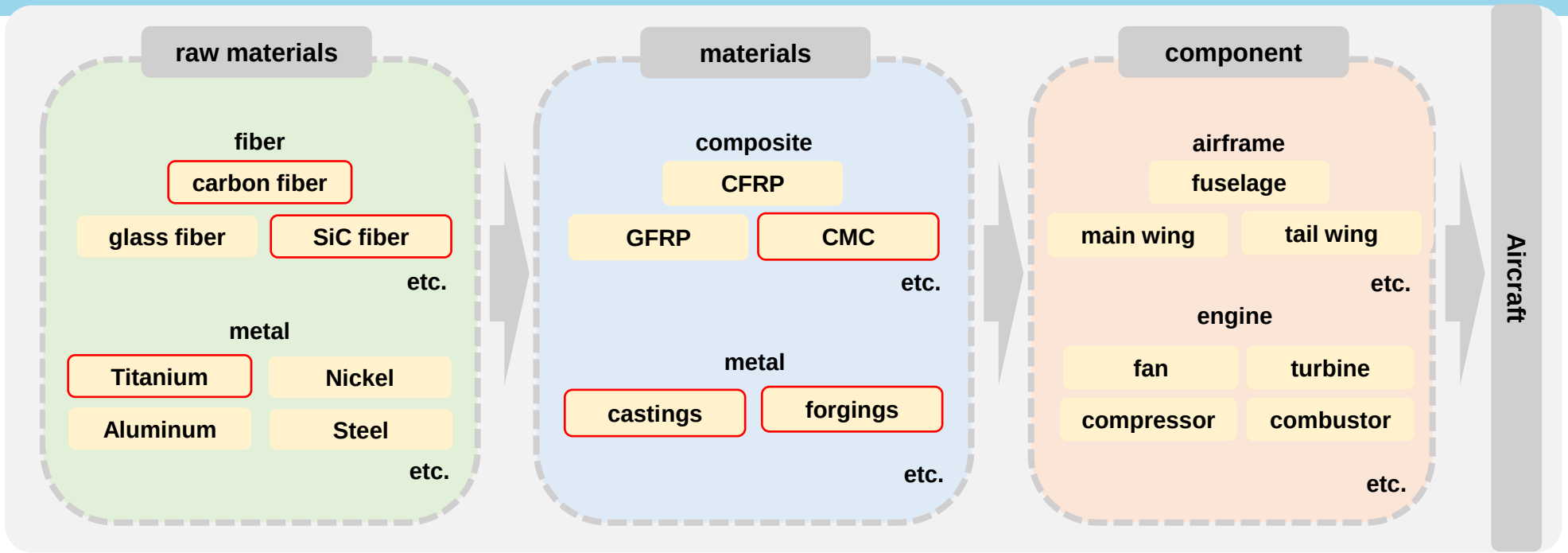
12 designated as critical products as of Feb 2024

*METI’s jurisdiction

Semiconductors*	**Cloud programs***	**Storage batteries***
Permanent magnets*	**Machine tools, industrial robots***	**Aircraft parts***
Critical minerals*	**Natural Gas***	**Electronic component***
Antibacterial preparations	**Fertilizers**	**Ship parts**

Support for ensuring a stable supply of “Aircraft Parts” under the ESPA

- **Aircraft parts** requiring advanced technology and strict safety certification are designated as Specified Critical Products under **the Economic Security Promotion Act**.
  Of these, the following 5 materials are particularly dependent or likely to be dependent on specific countries: (1) **large forgings**, (2) **CMCs** (ceramic composite materials) **and SiC fibers**, (3) **carbon fibers**, (4) **castings** and (5) **titanium sponge**.
- In order to ensure a stable supply of these materials, **a total budget of ¥74.4B ($540M) has been allocated to subsidize companies** that are engaged in **capital investment, technological development and certification** through the fund.

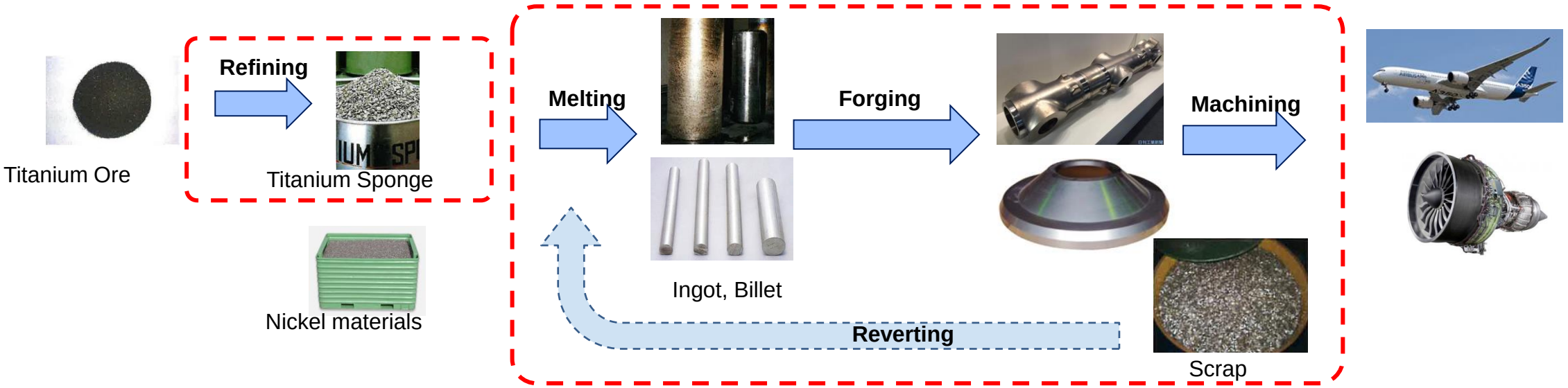


Global Challenge | Titanium & Nickel large forging supply chain risk

Russian invasion poses global supply chain risk around limited capacity of Ti & Ni large forgings.

METI's initiative to strengthen domestic capability and capacity will be contributed like-mind countries supply chain

- Activities to develop and acquire certification for melting, reverting, and forging process are subsidized.
- Activities to increase capacity of melting, forging, and machining process are subsidized.
- Activities to increase capacity of refining process (producing Titanium sponge) are subsidized.



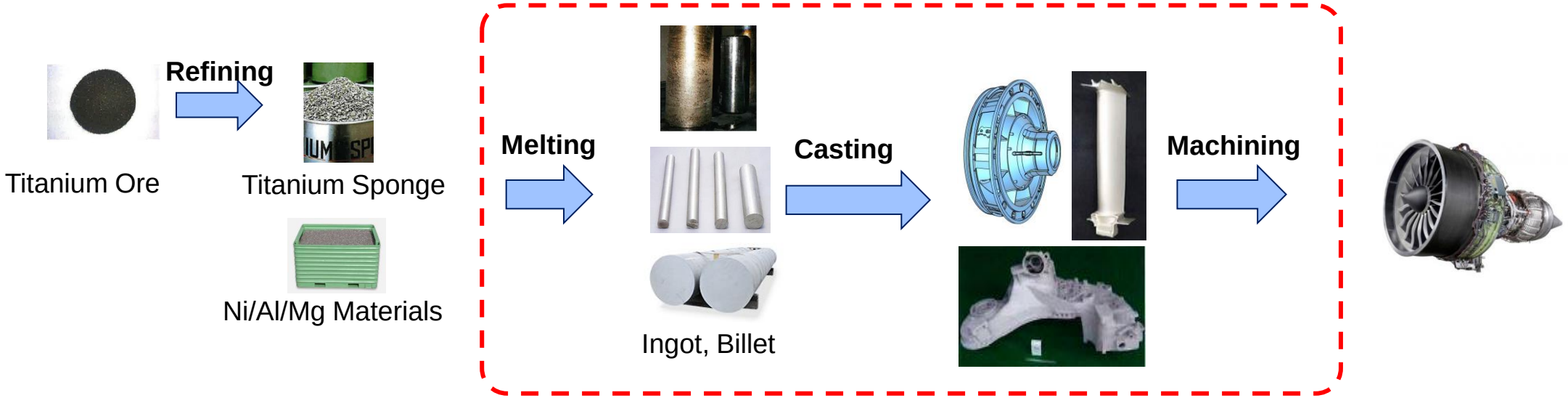
Players in Japan	Refining	Melting/Reverting	Forging	Machining
Titanium	Osaka Titanium Toho Titanium	Kobe-seiko Proterial	J-Forge	Kobe-seiko Proterial
Nickel		Daido Steel		Daido Steel

Global Challenge | precision & sand casting supply chain risk

Production reduction due to Covid-19 and increased demand for defense in the U.S. poses global supply chain risk around limited capacity of precision castings(Ti & Ni) and sand castings(Al & Mg) .

METI's initiative to strengthen domestic capability and capacity will be contributed like-mind countries supply chain

- Activities to develop and acquire capability of Titanium casting process are subsidized.
- Activities to increase capacity of melting, casting, and machining process are subsidized.



Players in Japan	Melting	Casting	Machining
Titanium	Kobe-seiko Daido Steel	IHI Daido Steel	IHI
Nickel	IMM	ICC	IHI
Al/Mg	NLM	Kobe-seiko TANIDA	Kobe-seiko TANIDA

DMD(DoD-METI-Dialogue)

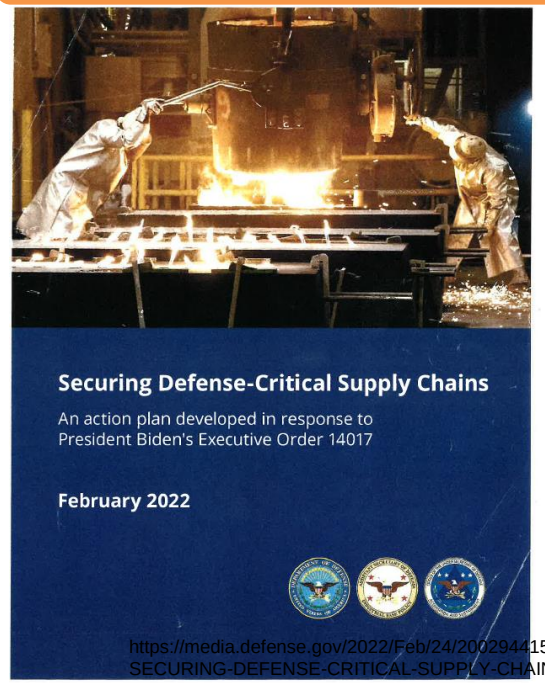
- Since 2016, METI and U.S. DoD have had a regular dialogue, DMD, to promote dual-use technologies and defense industrial cooperation.
- METI have arranged workshops with U.S. each military laboratory and Japanese startups for joint RDT&E project according to the interest technology area from U.S. side.
- In 2023, Vice minister for METI and Undersecretary of the Defense for A&S agreed to add the supply chain cooperation between US and JPN to the new discussion agenda of DMD.

Critical items designated under ESPA

Semiconductors*	**Cloud programs***	**batteries***
Permanent magnets*	**Machine tools, industrial robots***	**Aircraft parts (including forging and casting)***
Critical minerals*	**LNG***	**Electronic component***
Antibacterial preparations	**Fertilizers**	**Ship parts**

*METI's jurisdiction

US "Securing Defense-Critical Supply Chains



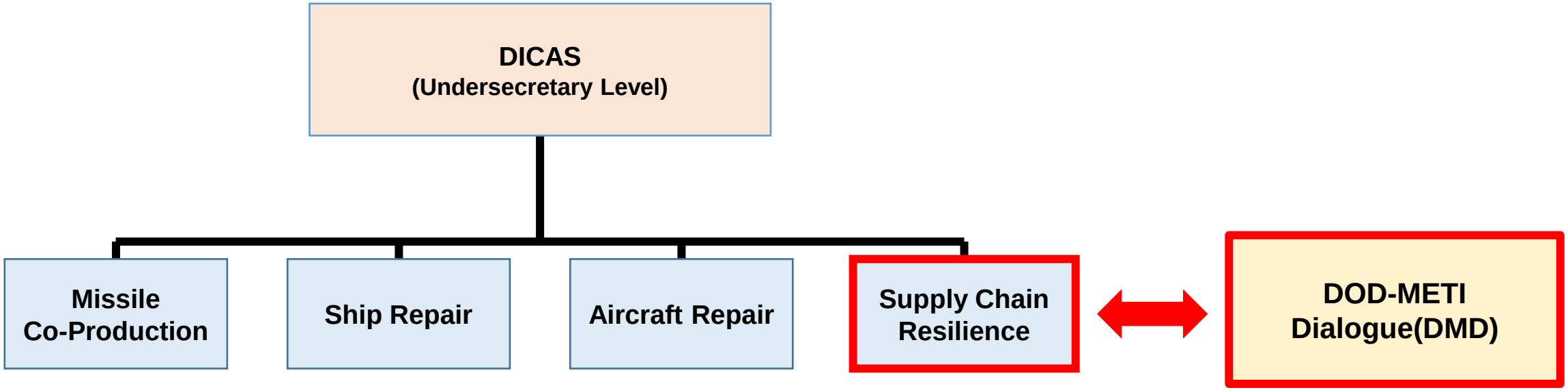
https://media.defense.gov/2022/Feb/24/2002944158/-1/-1/1/DOD-EO-14017-REPORT-SECURING-DEFENSE-CRITICAL-SUPPLY-CHAINS.PDF

Four areas in which **critical vulnerabilities** pose the most pressing threat to **national security**

1. Kinetic Capabilities
2. Energy Storage and Batteries
3. Castings and Forgings
4. Microelectronics

Collaboration with DMD and DICAS Supply Chain Resilience

- Following the U.S.-Japan Leader's Joint Statement, the S&TF has been reorganized and DICAS (Forum on Defense Industrial Cooperation, Acquisition and Sustainment) has been established.
- Four Working Group "Missile Co-Production", "Ship Repair", "Aircraft Maintenance and Repair" and "Supply Chain Resilience" have been established.
- METI, together with ATLA, will participate in the discussions of the SCWG as the co-chair from the Japanese side. METI will also coordinate with the discussions of the DMD.



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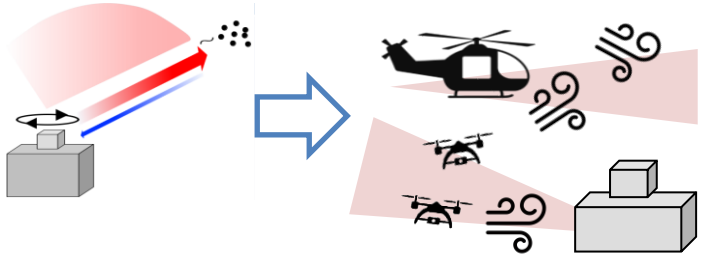
Accelerating Dual-Use Technology Development under ESPA

- Under ESPA, METI supports measures for securing critical items and 500 billion JPY investments in adapting critical technologies.
- Long-stand funding (5~10 years) for the startups and other deep-tech companies.

Doppler Lidar



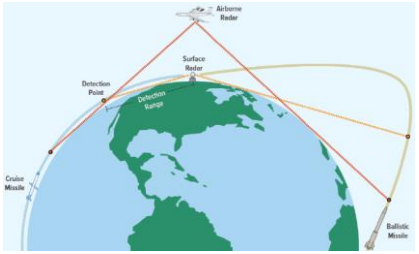
Artificial blood / Hemostatic agent

Aircraft development and manufacturing using digital technologies

Digital Modeling

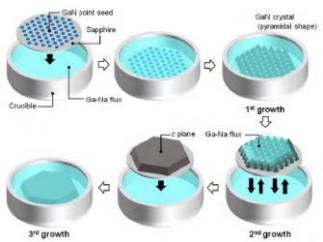
Simulator Test

High Altitude Platform Station



Autonomous UAVs Swarming

High-frequency Semiconductors / GaN device



Joint Promotion Committee for Utilizing Startups in the Defense Industry

- METI and JMOD has established the "Joint Promotion Committee for Utilizing Startups in the Defense Industry." This framework aims to create opportunities for matching the needs of JMOD/SDF with startups. By involving venture capital firms, the initiative promotes broader collaboration.

Past Events

First Meeting (June 16, 2023)

➢ JMOD and METI introduced their initiatives to nurture startups or utilize the advanced civilian technologies in defense area each other.

Second Committee (September 6, 2023)

➢ Based on the interests within JMOD/SDF, four startup companies introduced themselves to JMOD/SDF.

Third Committee (October 31, 2023)

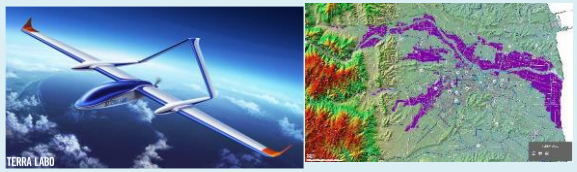
➢ Similar to the second Committee, four startup companies were invited based on the interests within JMDO/SDF.

Fourth Committee (January 12, 2024)

➢ Four venture capital firms, which focus on technology fields applicable to the defense sector, were invited. These firms introduced the technologies and products of their portfolio.

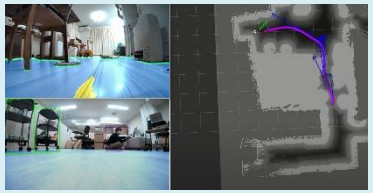
Example of the technology

Wide-Area Disaster Response Information Support Using Long-Range Unmanned Aerial Vehicles and Other Technologies



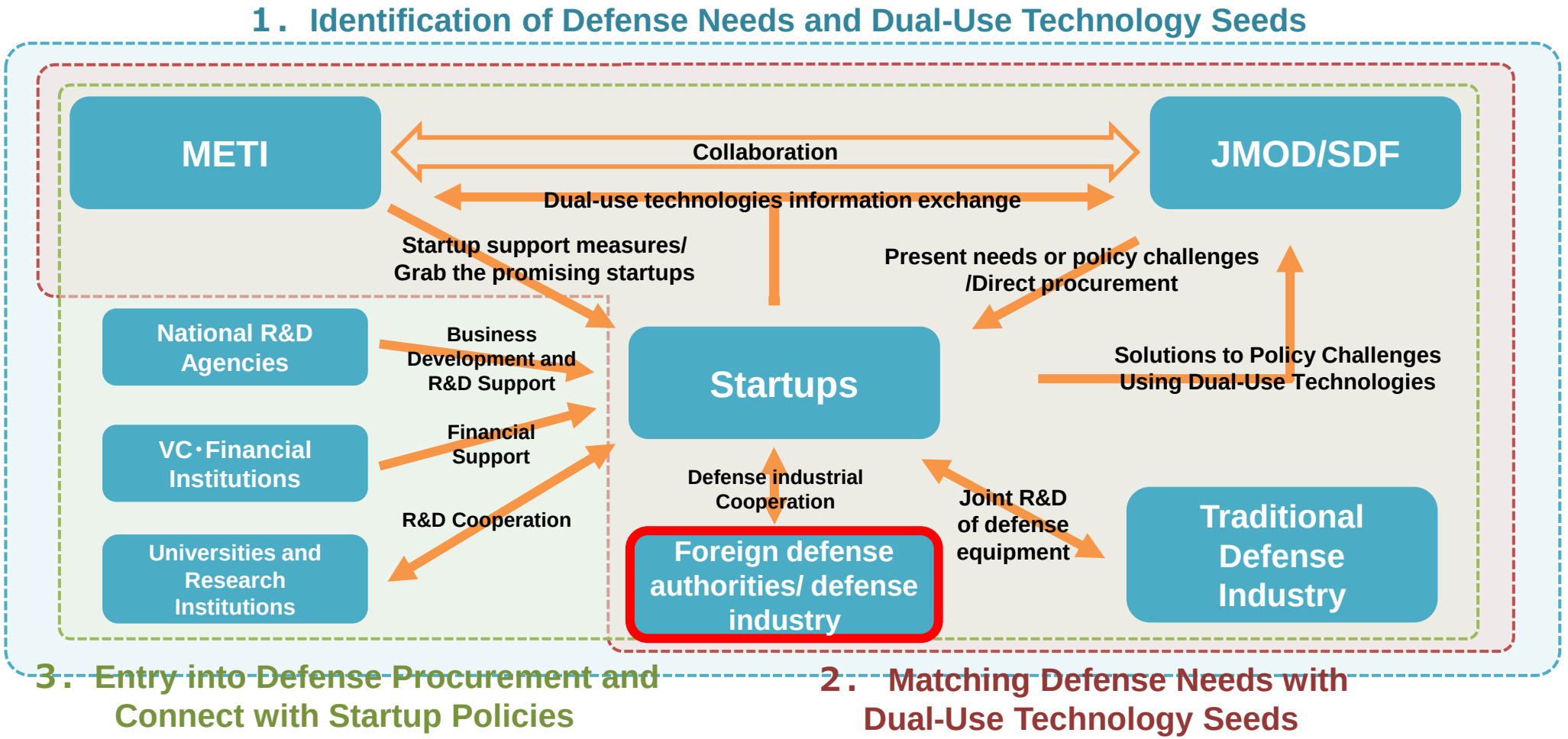
Drone Detection and Identification Using Doppler Lidar (Wind Condition Remote Sensing)

Command and Control Support Using Deep Learning and Autonomous Navigation of Robots



Building a Dual-Use Startup Ecosystem

- Aim to build an ecosystem by coordinating the equipment policies of JMOD with the industrial policies of METI.
  In doing so, METI and JMOD will use the "Joint Promotion Committee for Utilizing Startups in the Defense Industry," and other newly established procurement process as hubs.



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Review of Implementation Guidelines for the 3 Ps on Transfer

【Major Patterns of possible transfers under the previous Principles】

1. Transfers related to cooperation concerning rescue, transportation, vigilance, surveillance or minesweeping (The so-called “Five types”)
2. Transfers related to international joint development and production
3. Provisions of parts or services related to a licensed product of the U.S.

【Major Patterns of possible transfers after the Revision】

1. Transfers related to cooperation concerning rescue, transportation, vigilance, surveillance or minesweeping (The so-called “5 types”)
2. Transfers related to international joint development and production **(including provision of parts or services to countries other than partners, and provision of finished GCAP products to countries other than partners)**
3. Provisions of products **(including finished products)** related to a licensed product of **the U.S. and other countries.**
4. **Transfer of Parts**

【Remaining Issue】

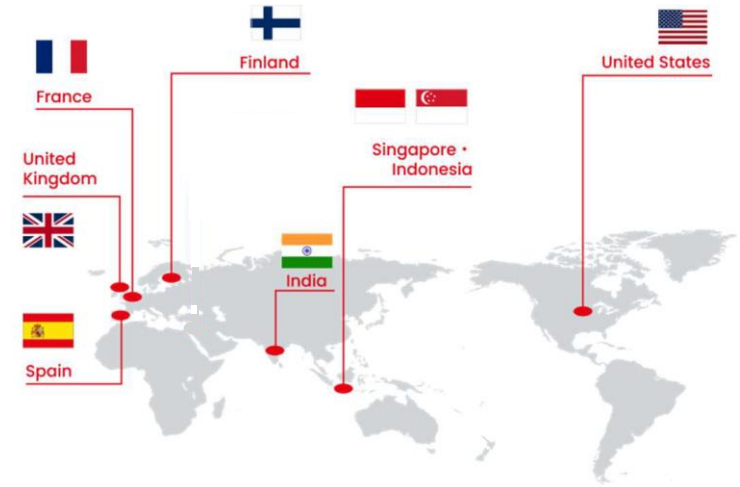
✓ Whether to expand the so-called “five-types” or not.

Support for Overseas Expansion in the Entrepreneur and Student Overseas Dispatch project “J-StarX”

- “J-StarX” is a program aimed at **fostering innovation talent in Japan** by dispatching entrepreneurs and startup executives to startup ecosystems around the world. The program began in 2023 and aims to **send 1,000 entrepreneurs** over a **period of 5 years** until 2027.
- Through the **“Global Growth for Dual-use” course**, the program aim to support the overseas expansion of domestic dual-use startups by dispatching participants to Hawaii, where US Indo-Pacific Command is located, **to build networks for entering public procurement, including defense, not only for the U.S. military but also for the Pacific island regions**.

J-StarX

主要派遣先



Global Growth for Dual-useコース

米国およびインド太平洋地域のハブとなるハワイにて、デュアルユース技術※1を特徴としながら海外展開を狙うために必要な知識の習得や交渉スキルの向上、デュアルユースの専門家コミュニティとのリレーション構築を目指す
※1 民間および軍事（安全保障）の両方で活用できる技術

募集締切	2024年10月31日(木曜)23時59分(JST)
訪問先	米国・ハワイ

対象者	デュアルユースとして米国やインド太平洋地域への海外展開を目指す日系スタートアップ企業
ステージ	ミドル・レイター
分野	デュアルユースの可能性がある全分野 昨年度の実績例）ドローン、繊維素材、宇宙衛星等
その他	海外展開における意思決定が可能な方（創業者・CXOクラス）がコースを通じて参加が可能なこと ビジネスレベル以上の英語力を有すること
補足	※渡航対象者等の応募条件の詳細は「04|対象者・応募要件」をご確認ください

PICHTR

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Companies Selected Last Year

Infostellar, Inc.

Business Discription
Development and operation of the ground station sharing platform "StellarStation" for orbiting satellites

Aerosense, Inc.

Business Discription
Development, manufacturing, and sales of industrial solutions that combine sensing and data processing/management using UAV

TERRA LABO Co., Ltd.

Business Discription
Design, development, and consulting services for unmanned aerial vehicles (fixed-wing, rotary-wing, VTOL).

Mitsufuji Corporation

Business Discription
Development, manufacturing, and sales of wearable IoT solutions and silver-plated conductive fibers

VFR Inc.

Business Discription
Planning, design, manufacturing, sales, repair, maintenance, inspection, import and export of small UAV, as well as design and manufacturing.

Companies participating in the US-Japan Tech Forum (1/2)

Space

LETARA

Rocket Link Technology

iMVA

Advanced Manufacturing

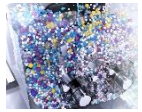
RICOS

PROMETECH

Particleworks™
Particle-based simulation software for CAE

MPS (Moving Particle Simulation)

Granuleworks™
Advanced Simulator for Granular Materials



DEM (Discrete Element Method)

SUGINO

SUN METALON

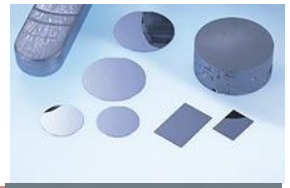
Companies participating in the US-Japan Tech Forum (2/2)

Other Technology Areas

Diarkis

TOKYO KEIKI

JX Advanced Metals



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Venture Capitals

UTEC

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Business Matching Portal Site