
IP protection in the era of the 4th industrial revolution

**IP5 Heads of Office with
IP5 Industry Meetings
31 May 2017**

Japan Patent Office

- 1. The Intellectual Property System for the 4th Industrial Revolution**
- 2. JPO's Initiative for Responding to the Fourth Industrial Revolution**
- 3. Utilization of AI Technology for Operations at the JPO**



The Intellectual Property System for the 4th Industrial Revolution

Outline of the Study Group's Report

April 19, 2017

**Ministry of Economy,
Trade and Industry**

1.(1)The Fourth Industrial Revolution and the Intellectual Property System.

<Report I.>

Up until now

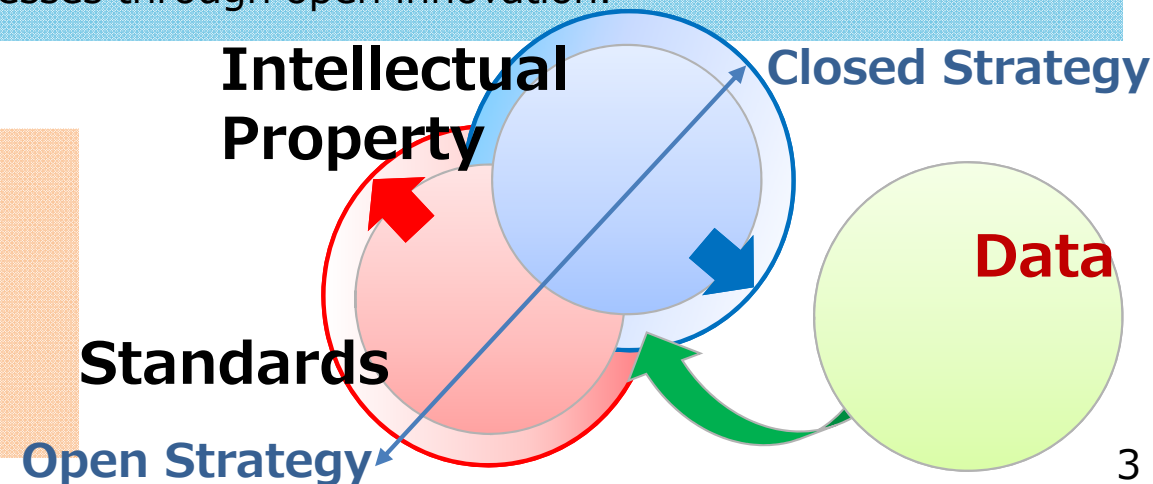
- Technologies concerning “things” are sources of competitiveness.
- Ensuring international competitiveness by establishing one’s own technology while competing with many competitors in the same industry.
- Promoting so-called “Open & Closed Strategy” which combines the utilization of standards to expand markets and the exclusive protection of inventions as “intellectual property.”

Present day

- Progress of technological innovations typified by IoT, AI, and big data.
- “Data”, along with its “analytical technics” and “business models” using such data, has become sources of new competitiveness.
- “*Connected Industries*”: the coming industrial societies that are creating newly added value based on various forms of connectivity.
- Necessity making profits and expanding businesses through open innovation.

From now

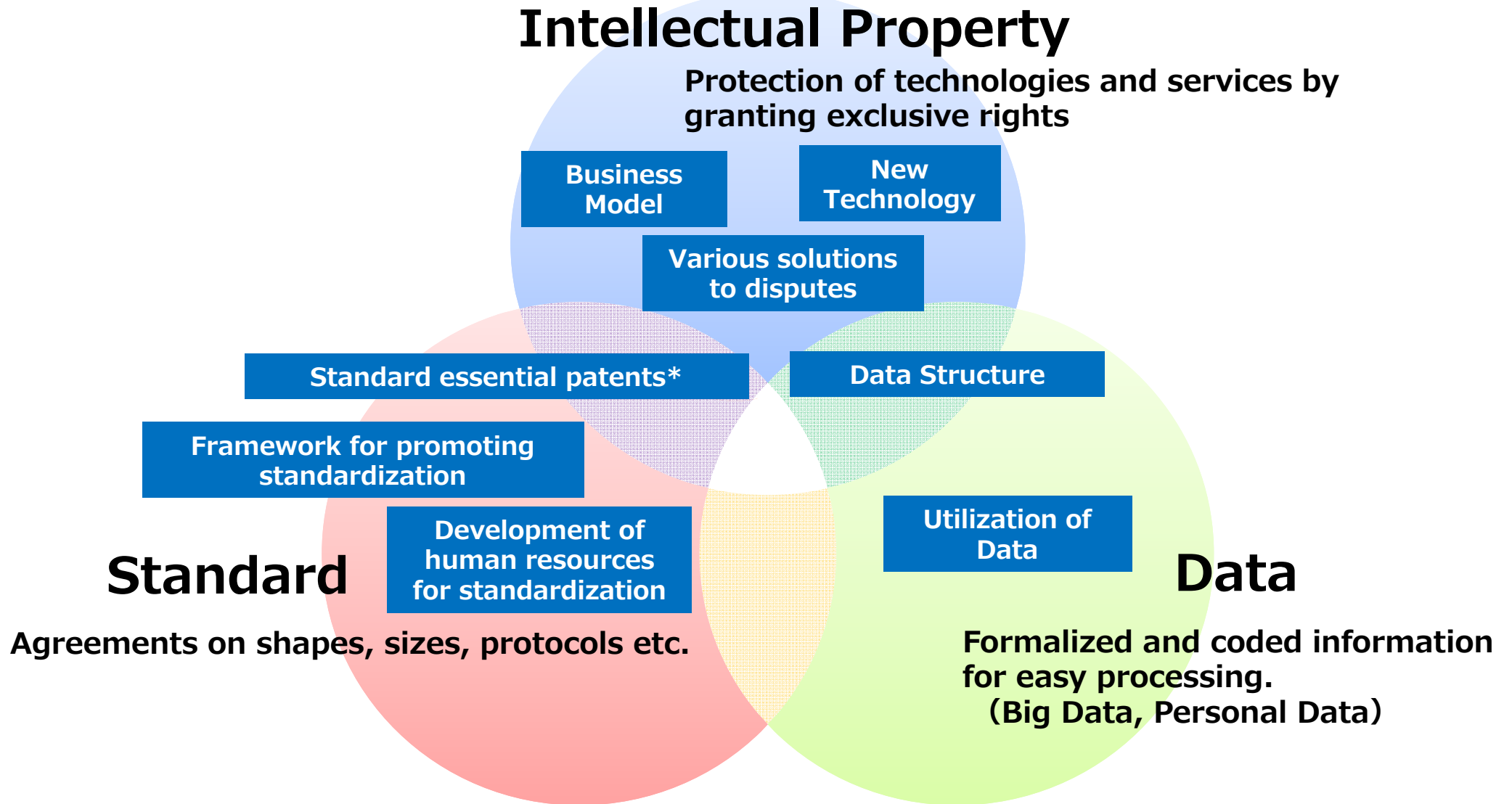
- Expanding and deepening targets of Open & Closed Strategy are necessary.
- Three-dimensional comprehensive strategy including “data” in addition to “intellectual property” and “standards” are required.



1.(2) The Fourth Industrial Revolution and Intellectual Property System.

<Report I.>

- Three-dimensional comprehensive strategy consisted of IP, data, and standards is to be considered



*Standard essential patents : Patents needed to comply with technical standards 4

2. Utilization of data

<Report II.1, III.1>

- Legal infrastructure for making use of data has been improving.
- On the other hand, there are insufficient measures to prevent unfair use of data.
- As legal framework for authorization to use and access data is uncertain, it is necessary to solely rely on contracts.



Utilization of data

Protection of data under the Unfair Competition Prevention Act

- Studying the possibility of amending the Unfair Competition Prevention Act (possible amendments)
 - Prohibiting the wrongful acquisition of data
 - Enhancing protection of data-encryption technology
 - Reducing burden of civil actions involving methods for analyzing data protected as trade secrets (cabinet order)
- Improving Guidelines on Trade Secret Management, and related material.



Utilization of data

Contracts dealing with authorization of use

- Conducting a study to establish guidelines to deal with the authorization of data utilization
- (Issues to be considered)
 - Ways to ensure appropriate protection of data and rules of contracts based on the actual state of data utilization and contracts on data between companies.

3.(1) The Industrial Property Rights System < Report II.2, III.2 (1) – (5) >

- Future innovation will probably create original data structures.
- In line with the popularization of the IoT, there is an increase in the number of patent applications for business related invention, which offer added values by smartly connecting services and products.
- It is difficult to determine what requirements have to be met, in order to acquire patent rights for such new data structure and business model inventions.
- New issues are arising due to advances in technological developments in AI, 3D printing, networking, etc.



Data structure

Clarification of proper handling of data structure

- Published case examples for examination of data structure which have patent eligibility (March 2017)
- Continuing to make efforts to further enhance predictability



Business Model

Intellectual Property for supporting business model based on the use of IoT

- Improving the environment in which patents can be steadily obtained and utilized (in fiscal year 2017)
(Specific Examples)
 - Checking the Examination Guidelines on software-related inventions
 - Collecting the utilizing cases of patented business related inventions
 - Utilizing newly created patent classification for IoT-related inventions
 - Establishing cross-sectoral examination group

New Technology

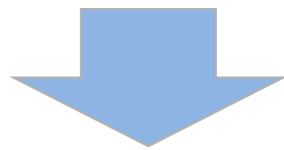
Initiatives on New Technologies

- Protecting patent rights for cross-border infringements.
- Handling inventions made by AI in the future in terms of industrial property rights.
- Handling data used for 3D printing in terms of industrial property rights.

3.(2) The Industrial Property Rights System

<Report II.2, III.2 (6) >

- Costs of managing intellectual property may increase due to the growth of inter-company collaboration in the era of IoT.
- Abuse of rights by patent trolls* is recognized as a social problem in the U.S.
- Frequent and prolonged disputes on the patents necessary for implementing standards concerning social infrastructure may have negative impact on economy and industries.
- Small and Medium-sized Enterprises (SMEs) and venture companies especially, might encounter difficulties in negotiating and dealing with lawsuits.



Standard essential patents (SEPs)

Introduction of license award system for SEPs.

- Considering the introduction of an ADR** system (license award system for SEPs) designed to deal with disputes on licensing of SEPs with due care of not unfairly harming the interest of patentees.
- Government decides appropriate license fees in the ADR system.
- Conduct necessary study with a view to revise the Patent Act in 2018.



Various solutions to disputes

Consideration of introducing mediation system that enables conflicts to be settled earlier.

- Considering setting up an ADR system (mediation), which is especially user-friendly for SMEs, in order to settle disputes over license agreements and patent right infringements.
- Paying enough attention to the demarcation with existing Private ADRs such as the Japan Intellectual Property Arbitration Center, when designing the new ADR system.

*Patent troll : A person or company who abuses patent rights to obtain license fees or high settlements.

**ADR (Alternative Dispute Resolution) : Means such as mediation to resolve conflicts without resort to litigation.

4. Enhancing Cooperative Framework and Developing Human Resources toward Achieving International Standardization

<Report II.3, III.3>

- Different industries have to cooperate with each other beyond the scope of their businesses, in order to quickly standardize.
- In Japan there is a lack of cooperative frameworks between industry and the public sector and a lack of skilled and experienced human resources for international standardization.



Framework for promoting standardization

Standardization among cross-sectional fields

- Enhancing cooperative framework between industry and public sector.
- (Examples)
- Using “The New Market Creation Standardization System”*
 - Cooperating with National Research Institute.



Developing human resources for standardization

Accelerating Development of HR for Standardization

- Implementing “The Three Action Plans for the Development of human resources for standardization”.**
- (Examples)
- Increasing number of companies with CSOs (Chief Standardization Officers)
 - Gathering information on strategies for making rules.
- Clarifying the role of patent attorneys as IP experts for standardization.

* Framework for standardization without requiring consensus of industry organizations within the country.

** Formulated this plan in January 2017 in the Working Group for standardization of human resources under the “Standardization Summit” in Japan.

5. Perspectives from Individual Industrial Fields, Small and Medium-sized Enterprises (SMEs), and Venture Companies

<Report IV. , V.>

Initiatives in the individual industrial fields.

Manufacturing

- Constructing the intellectual property portfolio, considering various business models that fully utilize new technologies such as edge-computing.*
- Promoting international standardization regarding data format in order to realize networked factories.

Mobility

- Rulemaking to protect against unfair use of vehicle data, etc. by third parties.
- Creating intellectual property strategies according to trends in patents by IT industry which has different business practices.

Health care·Medical care·Nursing care

- Rulemaking to protect medical technological data utilized between business operators.
- Promoting international standardization regarding data format for obtaining, saving, and storing information such as clinical data.

Appropriate measures to support SMEs, etc.

- Supporting the acquisition of patent rights at home and abroad and expansion of business activities overseas based on “Action Plan for Regional Intellectual Property Revitalization”(formulated in September 2016)
- Supporting market expansions by using “Creative Standardized System of New Markets”
- Promoting cooperation between and among major companies, SMEs, and venture companies. et al.

*Edge computing : A technology of information processing in order to efficiently process a large amount of data without being affected by any disturbance in communication environment; this is done by provision of a high level of information-processing function to user devices and by processing of data in a decentralized way at each of the user devices.

【Reference】 List of Members of Study Group

List of Members of Study Group

| | | |
|---------------------|--|---|
| Yuko Kimijima | Professor of Intellectual Property Law, Faculty of Law, Keio University | |
| Akira Goto | Professor emeritus, The University of Tokyo | |
| Kenji Kondo | General Manager Intellectual Property Division, Toyota Motor Corporation | |
| Shinsuke Sakakibara | Executive Director Chief Technical Advisor, Robot Business Division, FANUC Corporation | |
| Masahiro Samejima | Founding Partner, Attorney at Law, Patent Attorney, UCHIDA&SAMEJIMA LAW FIRM | |
| Junko Sugimura | Patent Attorney, SUGIMURA,TAMURA&PARTNERS | |
| Akira Suzuki | Deputy General Manager, Intellectual Property Planning Department, Intellectual Property&Licensing Division, OLYMPUS Corporation | |
| Masahiro Serizawa | Executive Specialist, Corporate Technology(CT) Division &Deputy General Manager, IP Management Division &Dept.Manager,Standardization Promotion Department, CT Division, NEC Corporation | |
| Toshinari Tsuruhara | Senior Consultant, Intellectual Property Business Division, Cyber Creative Institute Co., Ltd. | |
| Kenichi Nagasawa | Director, Group Executive, Corporate Intellectual Property and Legal Headquarters, CANON INC. | |
| Yasuyuki Nishioka | Professor, Faculty of Engineering and Design, Department of Engineering and Design, Hosei University | |
| Acting Chair | Mitsuyoshi Hiratsuka | Professor, Department of Intellectual Property Strategy, Tokyo University of Science |
| Toshimoto Mitomo | Corporate Executive, Mid-to-Long Term Business Development and Intellectual Property, Sony Corporation | |
| Yutaka Miyoshi | Attorney at Law, MORI HAMADA&MATSUMOTO | |
| Ryoji Mori | Attorney at Law, Eichi Law Offices | |
| Chair | Toshiya Watanabe | Professor, Research Center for Advanced Science and Technology, The University of Tokyo |

[Reference] List of Meetings and Themes of Discussion of Study Group

The Themes of Discussion

The 1st Meeting Oct. 17(Mon.), 2016

- Launch

The 2nd Meeting Nov. 10(Thurs.), 2016

- Ways to deal with each agenda item

The 3rd Meeting Nov.28(Mon.), 2016

- Study on protection of data and database

The 4th Meeting Dec. 15(Thurs.), 2016

- Current state of automotive fields
- Current state of robotics fields

The 5th Meeting Dec.26(Mon.), 2016

- Current state of healthcare and nursing-care equipment fields
- Current state of biotechnology fields
- Major points and further direction

The 6th Meeting Feb. 6 (Mon.), 2017

- Framework for simple and quick settlement patent disputes
- Support for intellectual property in local communities and SMEs

The 7th Meeting Feb. 17(Fri.), 2017

- Current state of information and communication equipment fields
- International standardization

The 8th Meeting Mar. 6(Mon.), 2017

- Dealing with creations made by AI
- Measures to respond to cross-border infringements
- Current state of measures by Ministry of Internal Affairs and Communications

The 9th Meeting Mar.24 (Fri.), 2017

- Functional enhancement for handling disputes (Cooperation with Patent System Subcommittee)
- A review of draft report

The 10th meeting Apr. 5 (Wed.), 2017

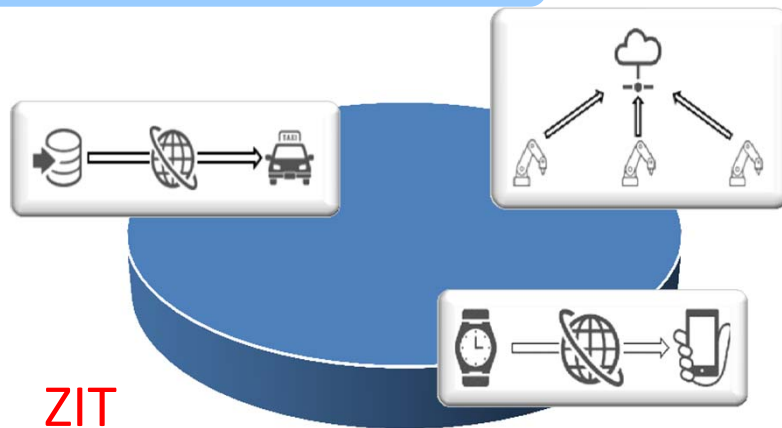
- Current state of Subcommittee on Protection and Utilization of Trade Secrets
- Compilation of report

JPO's Initiative for Responding to the 4th Industrial Revolution

Establishment of New Patent Classifications for IoT-related Technologies

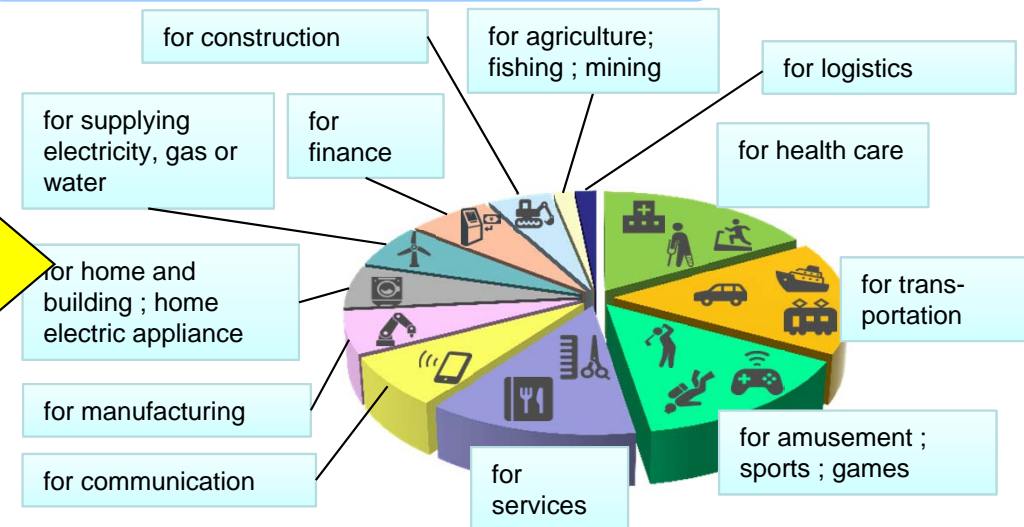
- The JPO was the first office in the world to establish new patent classification ZIT, making it possible to retrieve all the various IoT-related technologies comprehensively.
➔ Improve the efficiency of prior art searches and promote R&D activities
- In April 2017, the JPO subdivided ZIT by the aspect of use, in order to further improve user-friendliness.

Establishment of ZIT



- In November 2016, established and started assigning new patent classification ZIT, making it possible to retrieve all the various IoT-related technologies comprehensively.

Subdividing ZIT by use



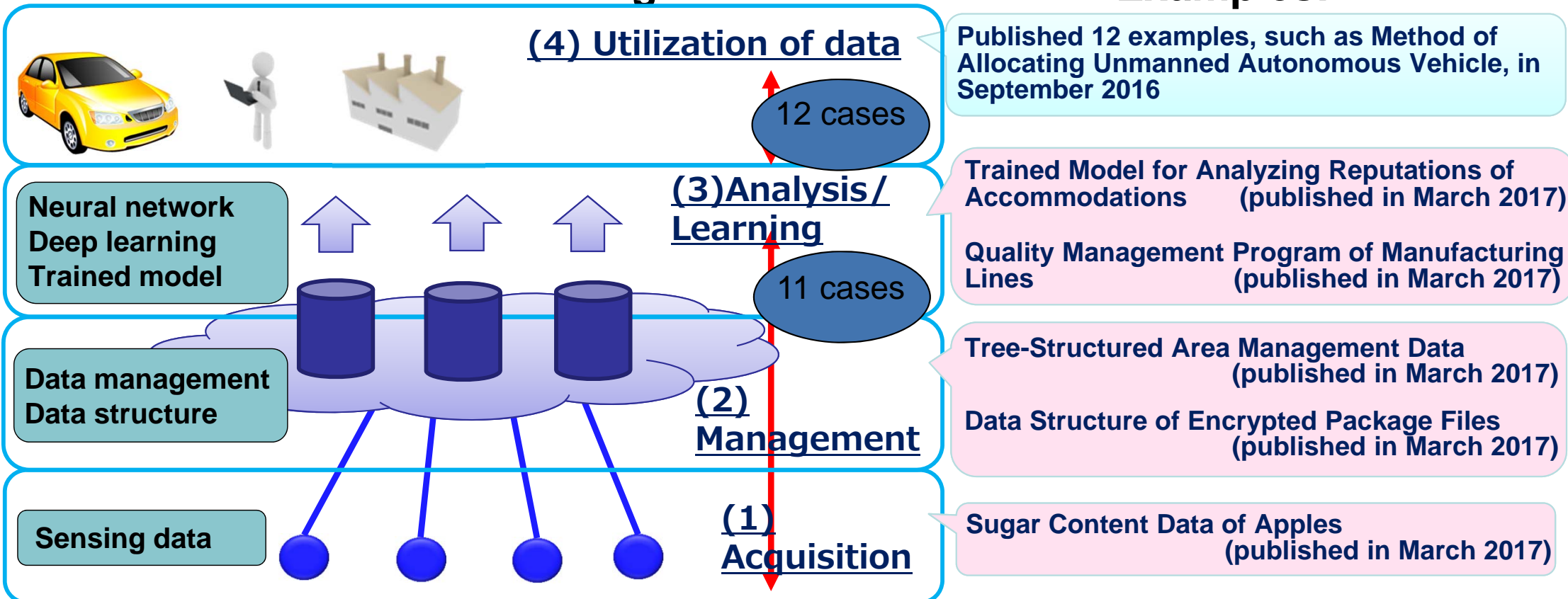
- In April 2017, subdivided ZIT by the aspect of use to enable retrieval of IoT technologies in respective uses.

Publishing Case Examples of Examinations on IoT-Related Technologies

- The JPO added examples to its Examination Handbook on how JPO's examiners determine the patentability of inventions on IoT-related technologies and was the first office in the world to publish this type of information on a website.
 - Sep. 2016: 12 examples on utilization of data (4)
 - Mar. 2017: 11 examples on acquisition (1), management (2), and analysis and learning (3) of data
- ➔ Improve applicants' predictability in terms of acquiring rights and promote innovations.
- Also in future, the JPO will provide useful, appropriate information on a timely basis.

IoT-related technologies

Examples:

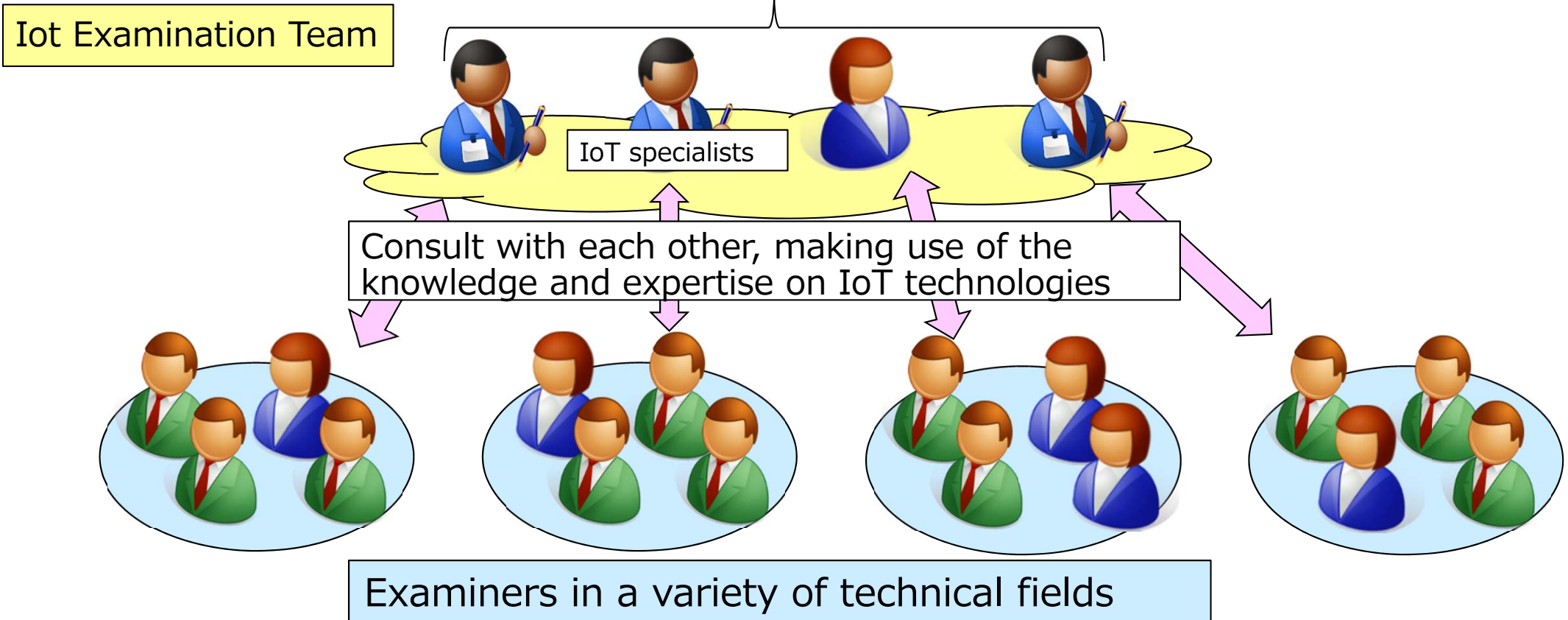


Setting up an Consulting Team for Examination of IoT-related invention(i.e. IoT Examination Team)

The JPO set up an IoT Examination Team, which is a new team consisting of examiners knowledgeable about inventions on IoT. By establishing a framework in which examiners from various departments can consult with IoT specialists, the JPO intends to realize higher-quality examinations based on making effective use of the IoT specialists' knowledge and expertise.

→ Support applicants in acquiring patents that are essential for promoting innovations

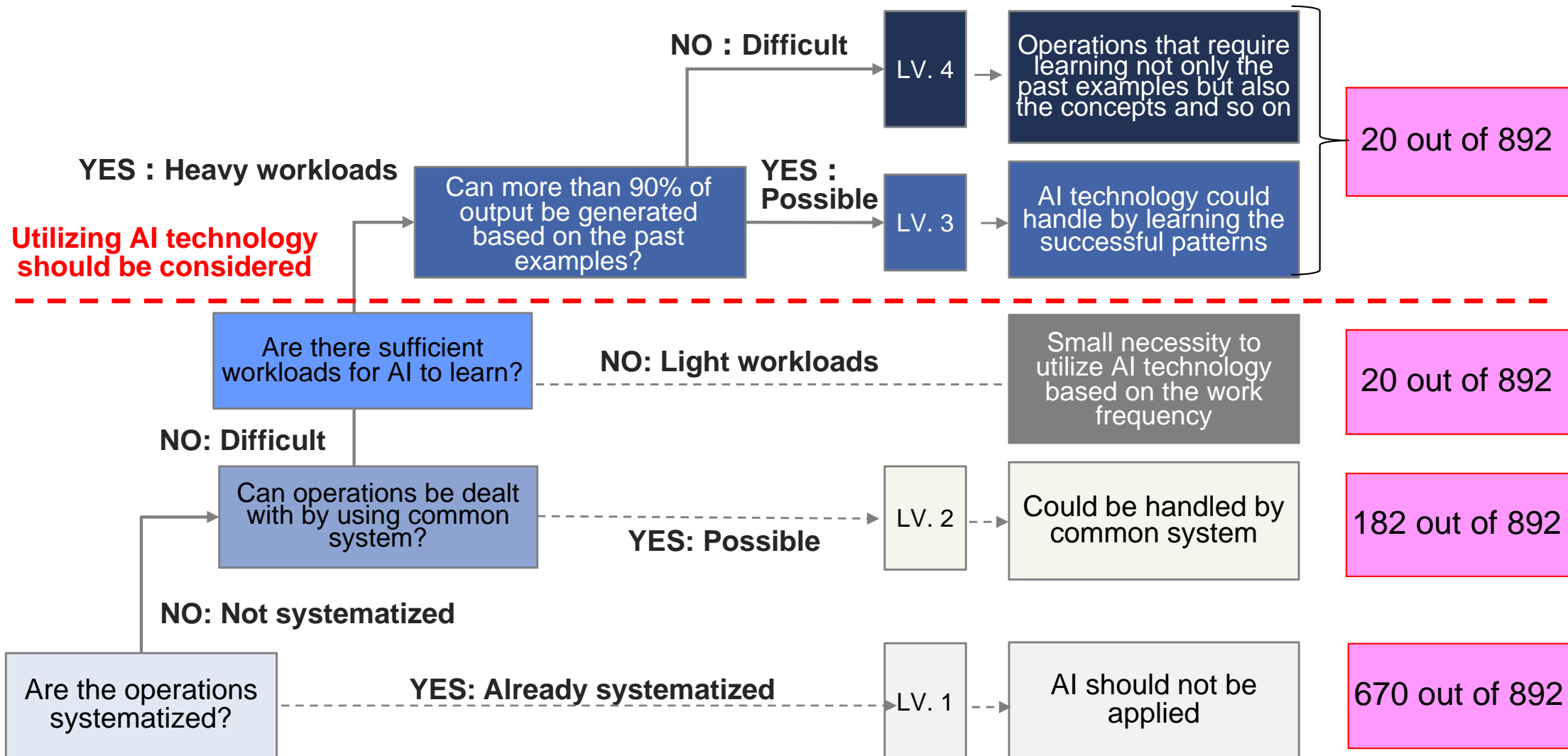
Accumulate and share knowledge and expertise on IoT technologies, as well as study case examples of how JPO's examiners determine the patentability of inventions on IoT technologies



Utilization of AI Technology for Operations at the JPO

Utilization of AI Technology for Operations at the JPO: (1) Study on Feasibility Levels

- The Japan Patent Office (JPO) reviewed 892 business operations, from application to examination.
- With experts' support, the JPO identified 20 business operations for which AI technology could be utilized.



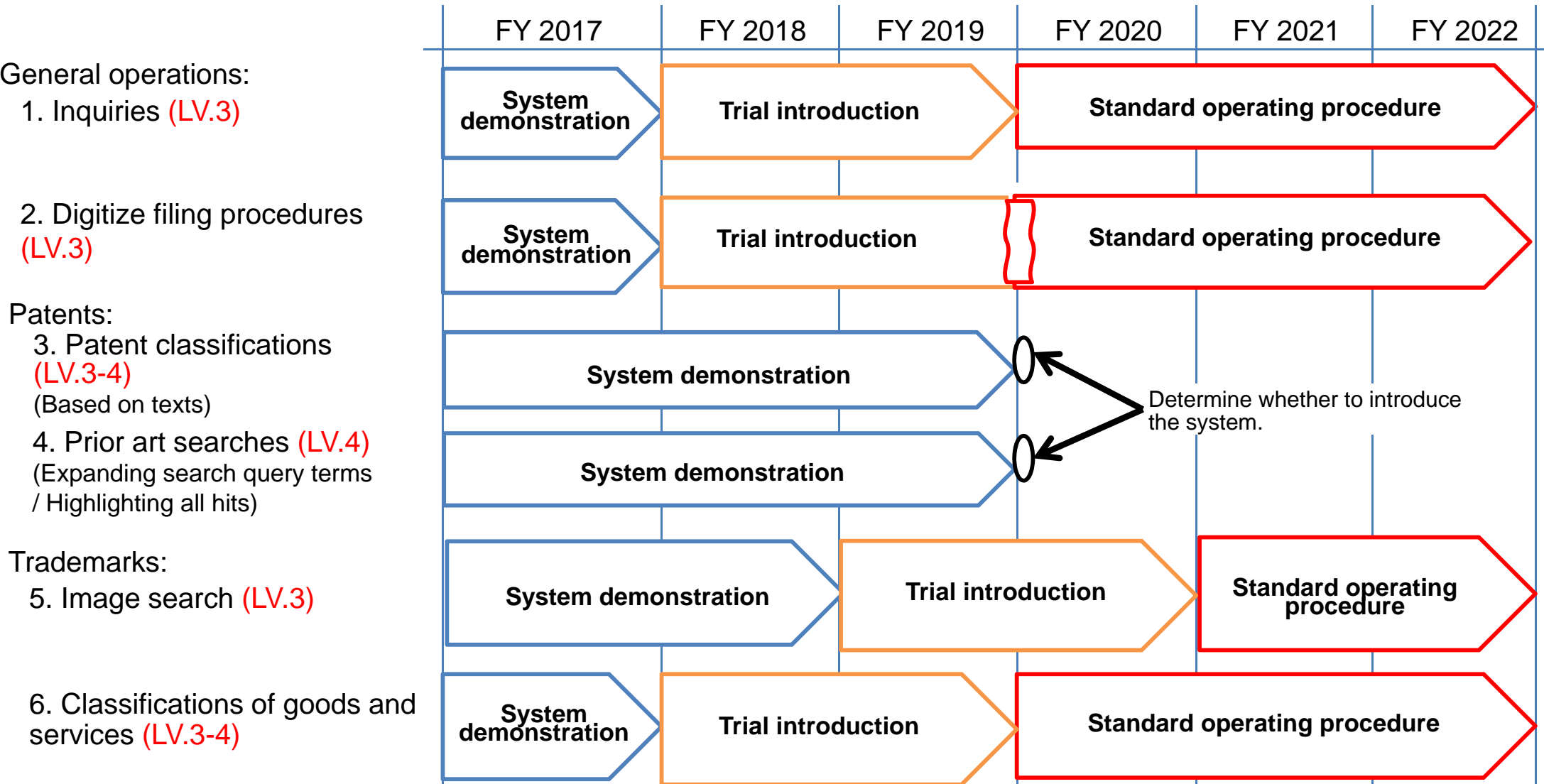
Utilization of AI Technology for Operations at the JPO : (2) Results of the Feasibility Study

| LV. | Common Business Operations | | Patents | Designs | Trademarks |
|---------|---|---------------------------------------|--|--|---|
| | Applications | Formality Checks | | | |
| LV. 4 | | | 9. Determination on patentability | 12. Determination on registrability of designs | 15. Determination on registrability of trademarks |
| | | | 8. Understand the details of and identify inventions | | |
| | | | 7. Prior art searches | 11. Prior art searches | |
| LV. 3~4 | | | 6. Assign patent classifications | 10. Assign design classifications | 14. Classifications of goods and services |
| LV. 3 | 3. Digitize filing procedures | | 5. Quality audits (error check) | | 13. Trademark image searches |
| | 2. Check seals being stamped on application documents | 1. Inquiries. (Identity verification) | 4. Check registered trademarks in applications | | |
| | 1. Inquiries. (Understand questions and reply) | | | | |

Completed basic research; and used in other industries
 At the stage of R&D
 No case of R&D

Utilization of AI Technology for Operations at the JPO : (3) JPO's Action Plan (excerpts)

- This fiscal year, the JPO will start system demonstration for the following 6 areas.
- The JPO set up a “Task Force” consisting of AI technology experts for further consideration.



* Each initiative in the Action Plan is a plan that still remains under consideration. Therefore, the plan would be revised through further consideration.

Thank you!

