

To all our clients



Company Profile and GFI e-Tally[®] Technology

**-Management Risk Minimization-
Eliminates Risk of Encrypted Data Residuals**

Sep 20, 2022.
Global Friendship Inc,

Note:
Since there is a possibility that technical content etc. will be changed without prior notice due to changes that affect business such as social trends and technological innovation, For the latest information please contact GFI.

In the global trend toward stricter information asset management, companies are being urged to take more sophisticated information security measures, and the penalties are being tightened.

Management is required to select and implement the best measures among those available in the market as their management responsibility.

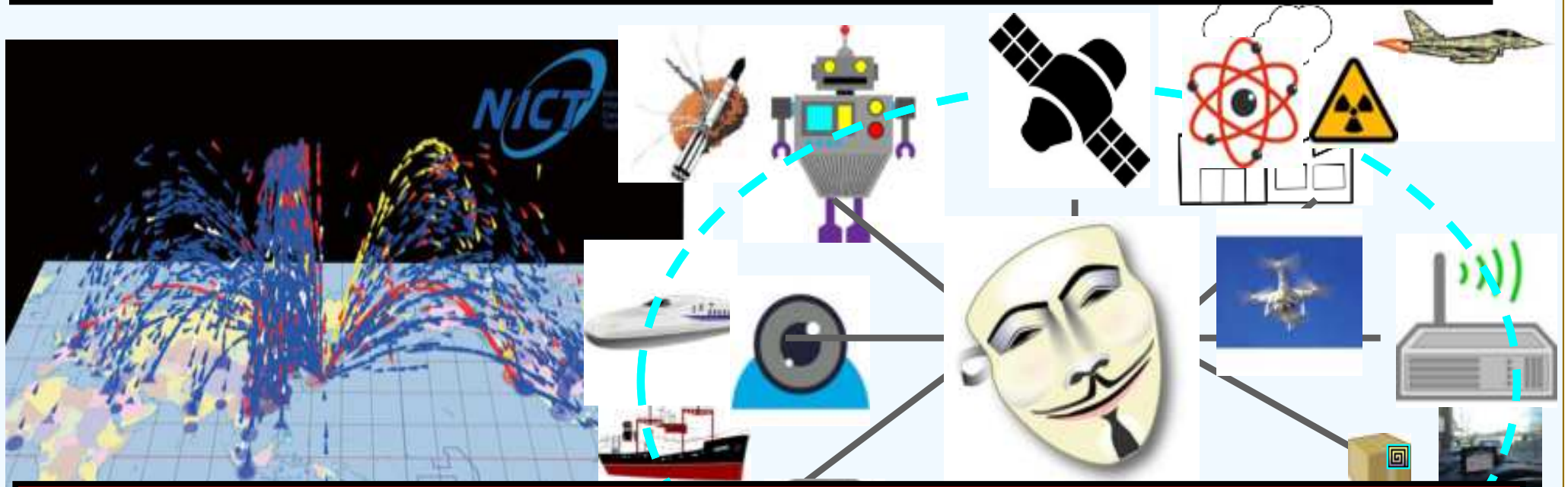


「Advantages of Introducing GFI e-Tally®」

- (1) Minimize the risk of litigation by "change to Tally file" information assets with no actual damage**
- (2) Reduced risk of litigation after management resigns when a decision is made to take countermeasures**
- (3) Enables advanced multi-layered defense coordination with different security technologies**
- (4) Enhanced security by adding to currently used security measures**
- (5) Measures to address the limits of the cyber risk insurance underwriting business model**

Cyber Attack is Global Issue

Information asset management must be secure, simple, and able to minimize litigation risk



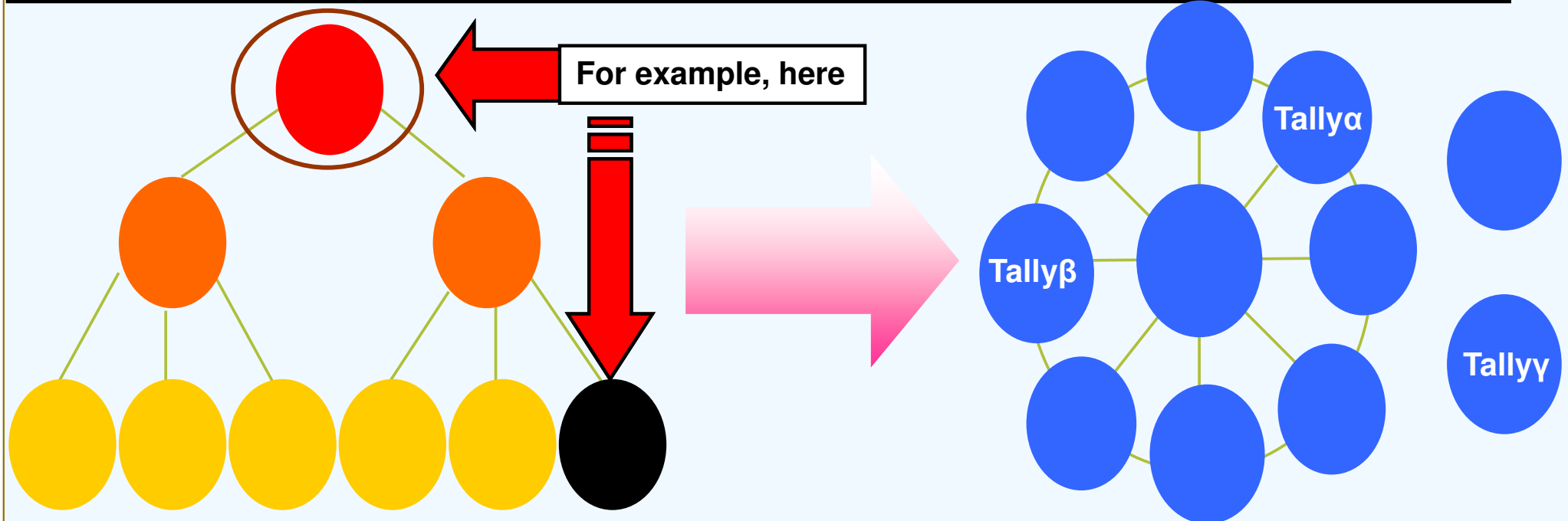
Management has a legal obligation to secure and manage

Reference image source:
National Institute of Information and Communications
Technology (NICT) WEB Publication Pamphlet
<https://www.nict.go.jp/data/pamphlet/index.html> and others

Cutting off the root causes of information leaks and other problems to obtain greater security.

Information leaks do not occur if the information itself does not exist. By using GFI e-Tally®, you can prevent information assets from existing and reduce the burden not only on your information system, but also on your management and administrative departments. It is a simple and fundamental solution.

Shift information management from centralized to decentralized and reduce management responsibility



Cloud Computing is Not a Panacea



「Key Points of "Cloud by Default of the Japanese Government (ISMAP)

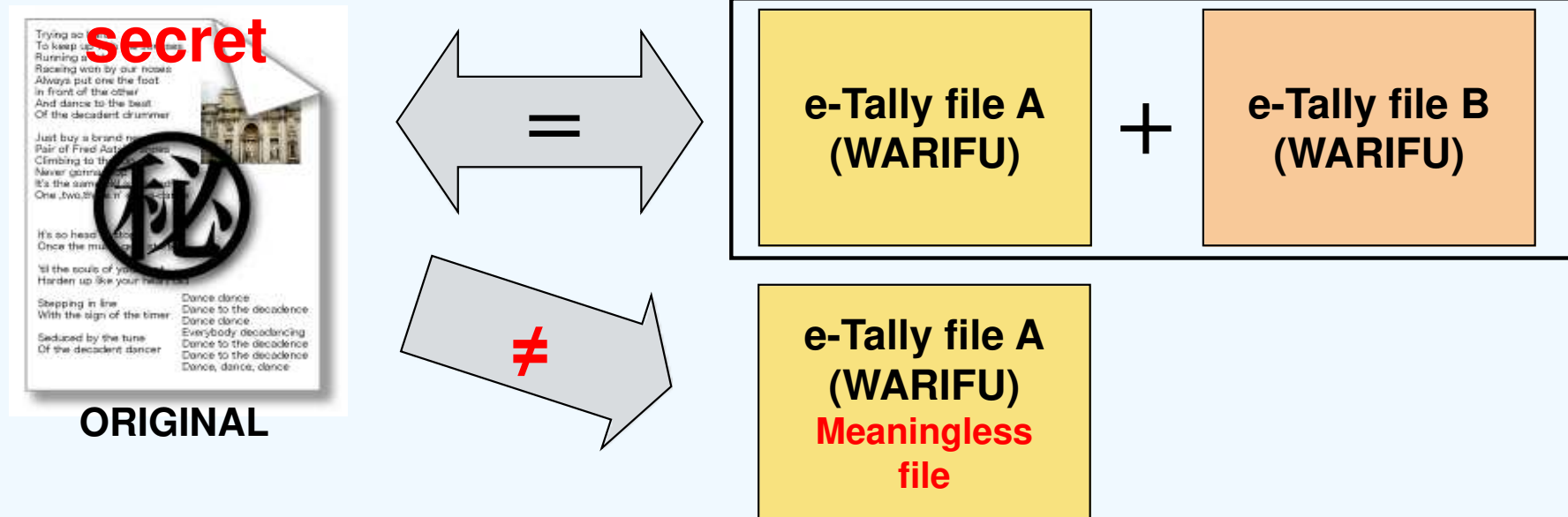
- (1) Is it really safe to entrust information assets to cloud providers?
- (2) Is the management system for IDs and encryption keys secure?
- (3) **Data management is the user's responsibility**

Source: ISMAP Management Criteria Manual, July 12, 2021, from ISMAP Operation Support Organization Publication

What is "GFI e-Tally[®]" (WARIFU)



An e-Tally is a process that generates an e-Tally file (WARIFU) by fragmenting the original digital data really bit by bit and sorting it differently each time, regardless of the type of data. In the unlikely event of a data leak, the original data cannot be restored from the unrecoverable number of e-Tally files (WARIFU).



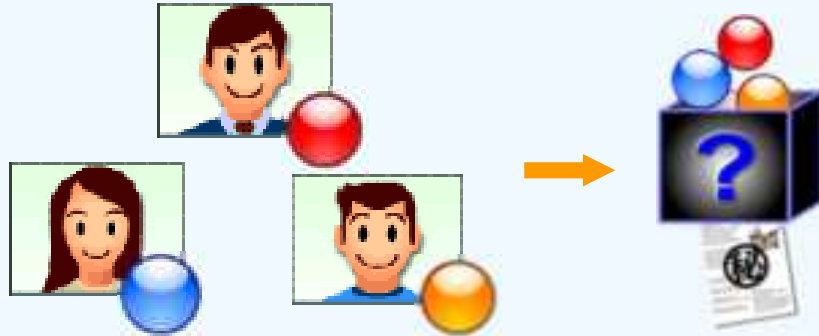
If necessary, the data can be recovered by collecting the required number of files.

Information Security Center, Cabinet Secretariat (now Cabinet Cyber Security Center)
Unified Criteria for Information Security Measures of Government Agencies (December 2005 version (first edition of the whole version))
Explanatory Note (Securing the security of sensitive information during transportation (reinforced compliance items) and securing the security of sensitive information in mobile PCs)
<http://www.nisc.go.jp/active/general/pdf/k303-052c.pdf>
Unified technical standards for information security measures of government agencies (2012 edition) Explanatory document (Securing the security of necessary stable information in server devices)
<http://www.nisc.go.jp/active/general/pdf/K305-111C.pdf>
Guideline for Establishment of Countermeasure Standards for Government Agencies (FY2021 Edition) (Use of Secret Sharing Technology when transferring classified information)
<https://www.nisc.go.jp/active/general/pdf/guider3.pdf>

Basic Functions of GFI e-Tally[®]



(1) Normal mode (decentralized management, fully secret and decentralized)



Only when all of the distributed e-Tally files are in place, can the original be restored.
The original can be restored only when all the distributed
(n,n type, very similar to AONT theory)

(2) Recovery Mode (Distributed Management & BCP Coping, Threshold Secret Sharing Type)



Even if some of the e-Tally files are not aligned, it is possible to recover the original.
However, it is not possible to restore the original from each individual e-Tally file.
(k,n type, support for up to 2 losses is implemented as a standard feature)

(3) Minimize mode - The size of a single generated e-Tally file can be reduced.
-In particular, the n,n type has a greater degree of freedom since the Pro V3 version.

(4) Self-authentication function - Allows users to set conditions for restoration.
The file itself, not the application, can have such characteristics !

(5) Win, Linux, and Mac (iOS) OS versions (32bit and 64bit) are available and mutually data compatible.
-The number of library divisions usually ranges from 2 to 10.

Overview of External Evaluation



The University of Tokyo

e-Tally Security Strength Survey Report December 20, 2001

Plaintext S , which is secret information, is divided and encoded into n e-Tally files.

If all the n e-Tally files are aligned, the plaintext S can be compounded, but the information on the plaintext S cannot be leaked from the e-Tally files below $n-1$.

However, the information of the plaintext S is designed so that the information of the plaintext S does not leak out from the $n-1$ or smaller e-Tally files. (Omitted) This is generally known as the Secret Sharing Scheme.

(omission) This can be considered as a special case of the method generally known as the Secret Sharing Scheme.

National Institute of Advanced Industrial Science and Technology

Safety Assessment of the GFI e-Tally(R) Kouji Suteta November 03, 2015

The current security assessment estimates, for example, that the possibility of an attacker being able to completely recover the original data with only one of the three available crack files obtained is about as difficult as saying the correct answer from a number of approximately 10 to the 105,000th power of cases. (omitted) If limited to the contents obtained from the safety evaluation at this point, it is at a level that can be considered to have sufficient information-theoretic safety (omitted), and the safety of this technology can be expected to be at a level worthy of consideration for such technical standardization.

reference URL public information:[Dec. 26th.12] http://www.gfi.co.jp/01news20151226_393.html

Data Protection Comparative Table



Means of data protection	Plain text (no protection)	encryption (normal protection)	GFI e-Tally file -WARIFU- (the best Practices)
Legal interpretation	(no protection)	(normal protection)	(the best Practices)
The harm occurs	○		
It conflicts with laws		○	
The harm does not occur			○

In the Japanese Personal Information Protection Law.

This Comparison table which I confirmed in Ministry of Economy, Trade and Industry and personal information protection Committee. When I made data leak, I confirmed how it was evaluated from the outdoors of the organization. (February 20, 2015, Ministry of Economy, Trade and Industry Review : In the case of the numerical “WARIFU” that cannot be restored to the original state, But the fact that some electronic file was flowed out exists.)

Avoiding the Risk of Litigation(*)

Generally, when filing a lawsuit, a person seeking to become a plaintiff must show that the lawsuit violates his or her rights (standing). In this case, however, it was impossible to identify whose information was contained in the individual GFI e-Tally files, and even if someone had obtained the GFI e-Tally files, he could not be a plaintiff because he could not prove that the information was his (personal information). Accordingly, the the GFI e-Tally technology would also avoid the risk of litigation in many cases.

(*) ECOM, March 2010.TF1 Legal Opinion Jiro Makino, Lawyer, Makino Law Office, P.C. <https://www.jipdec.or.jp/archives/publications/J0004291.pdf>

Licensing Results



GFI was the first company in the world to commercialize the secret sharing technology WARIFU in 1999.

The basic core technology library product name is GFI e-Tally®.

Licensing Results **Available for Information Disclosure**

Public Systems

Ministry of Internal Affairs and Communications

Ministry of Economy, Trade and Industry

General Foundation

Municipalities

Japanese Red Cross Society, etc.

Commercial Systems:

I-O DATA DEVICE, INC.

Hitachi, Ltd. Hitachi Solutions Create, Ltd.

TOPPAN INC.

NRI Secure Technologies, Inc.

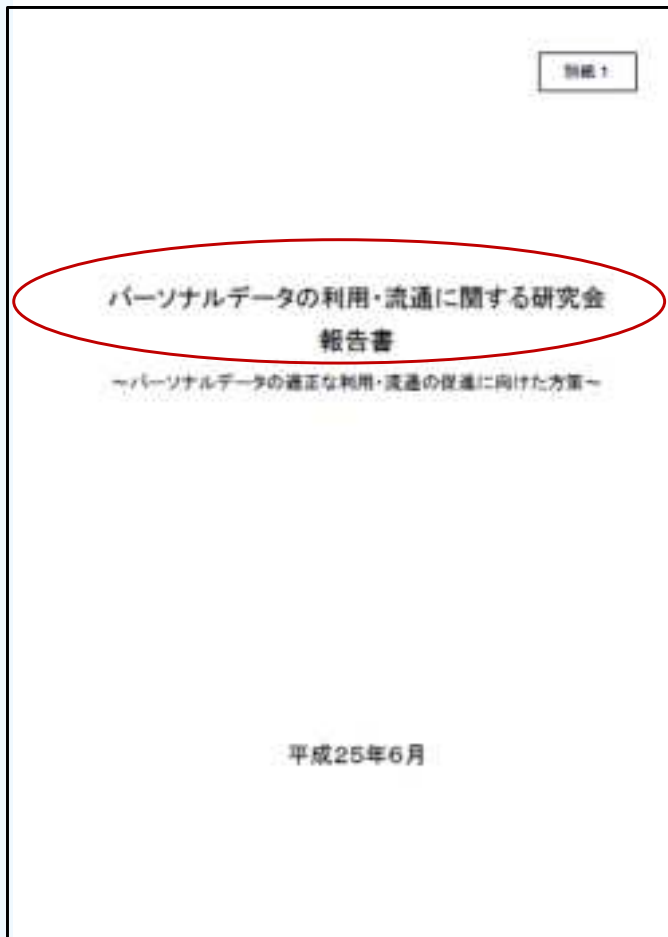
KOTOBUKI SEIHAN PRINTING. LTD.

Mitsui Bussan Secure Directions, Inc.

NS Solutions Corporation, etc.

Report of the Study Group on the Use and Distribution of Personal Data

GFI e-Tally® related report (de facto anonymization technology)



① Related to GFI e-Tally® : from p. 32

6. Use of Related Technologies for Personal Data Protection

(1) Basic Concept

In order to promote the appropriate use of personal data, it is necessary to develop technologies that can be used to protect privacy (Privacy Enhancing Technologies: Privacy Enhancing Technologies). To promote the appropriate use of personal data, it is important to make the best use of available privacy enhancing technologies (Privacy Enhancing Technologies (PETs)) to protect privacy.

On the other hand, with respect to technologies that can be used to protect privacy

The application of such technologies will ensure compliance with the rules for the use of personal data. The application of such technologies should be explained concretely and in an easy-to-understand manner.

(2) Specific directions

In particular, for data to which secret sharing technology with information-theoretic security is applied, if it is certain that the number of distributed data necessary for decryption has not been leaked Even if the leaked data contains personal data that can be protected when combined with other distributed data and decrypted, the leaked data alone has no significant information and can be considered as having no substantial impact.

References : https://www.soumu.go.jp/main_content/000231357.pdf

Ministry of Internal Affairs and Communications Publication of the "Study Group on the Use and Distribution of Personal Data" Report June 25, 2013

In accordance with the "Guidelines for the Establishment of Countermeasure Standards for Government Agencies

① Related to GFI Electronic Tickets®: From P.97 - 98



3.1.1 Handling of information

3.1.1(6)(a) and (b)

3.1.1(6)-2 When electromagnetic records that are sensitive information are transported outside the area requiring management measures or transmitted using communication lines outside the organization, etc., the following measures shall be taken to prevent information leaks

b) Divide the required confidential information into multiple pieces of information, and transport or transmit them by different routes and means.

Basic Countermeasure 3.1.1(6)-2 b) "Splitting information into multiple pieces

By using secret dispersion technology, a type of cryptography, to divide information to be kept secret into multiple pieces of data, it is possible to make it impossible to recover any of the original information even if one of the pieces is stolen. By transporting and transmitting each of these divided data through different routes (e.g., sending one of them by e-mail and mailing the other one by an external electromagnetic recording medium such as DVD or USB memory), information leakage can be prevented. Since the secret sharing technology itself is a type of cryptography, there is no need to further encrypt the data divided by this technology, and no encryption key is required.

Note:

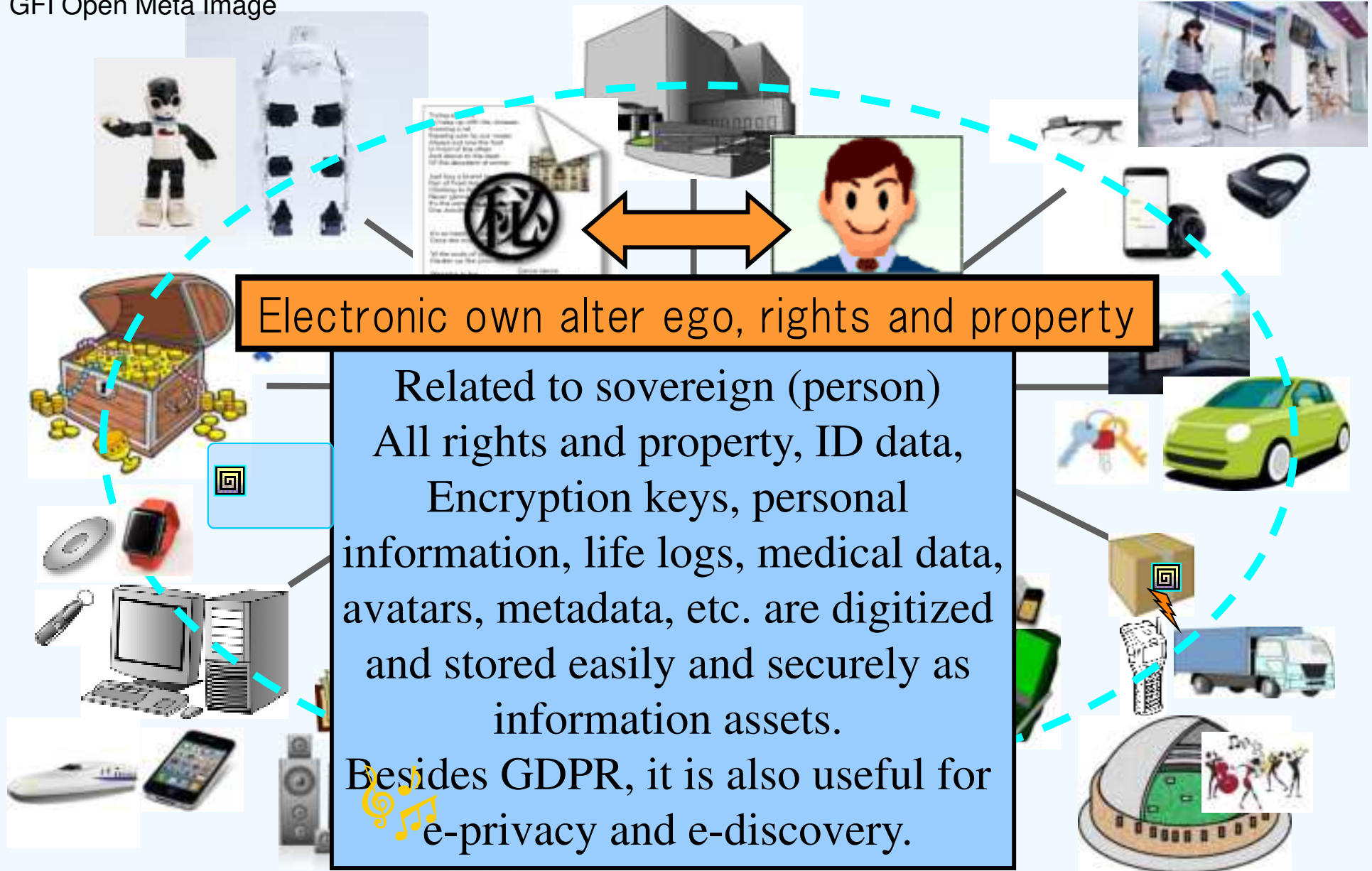
This article was originally written in response to a request from NISC to GFI to use GFI e-Tally® as an information security measure, and various opinions were exchanged.

References : <https://www.nisc.go.jp/pdf/policy/general/guider3.pdf>

NISC (National center of Incident readiness and Strategy for Cybersecurity) Major Publication July 7, 2021

Self-Information Control Rights Market

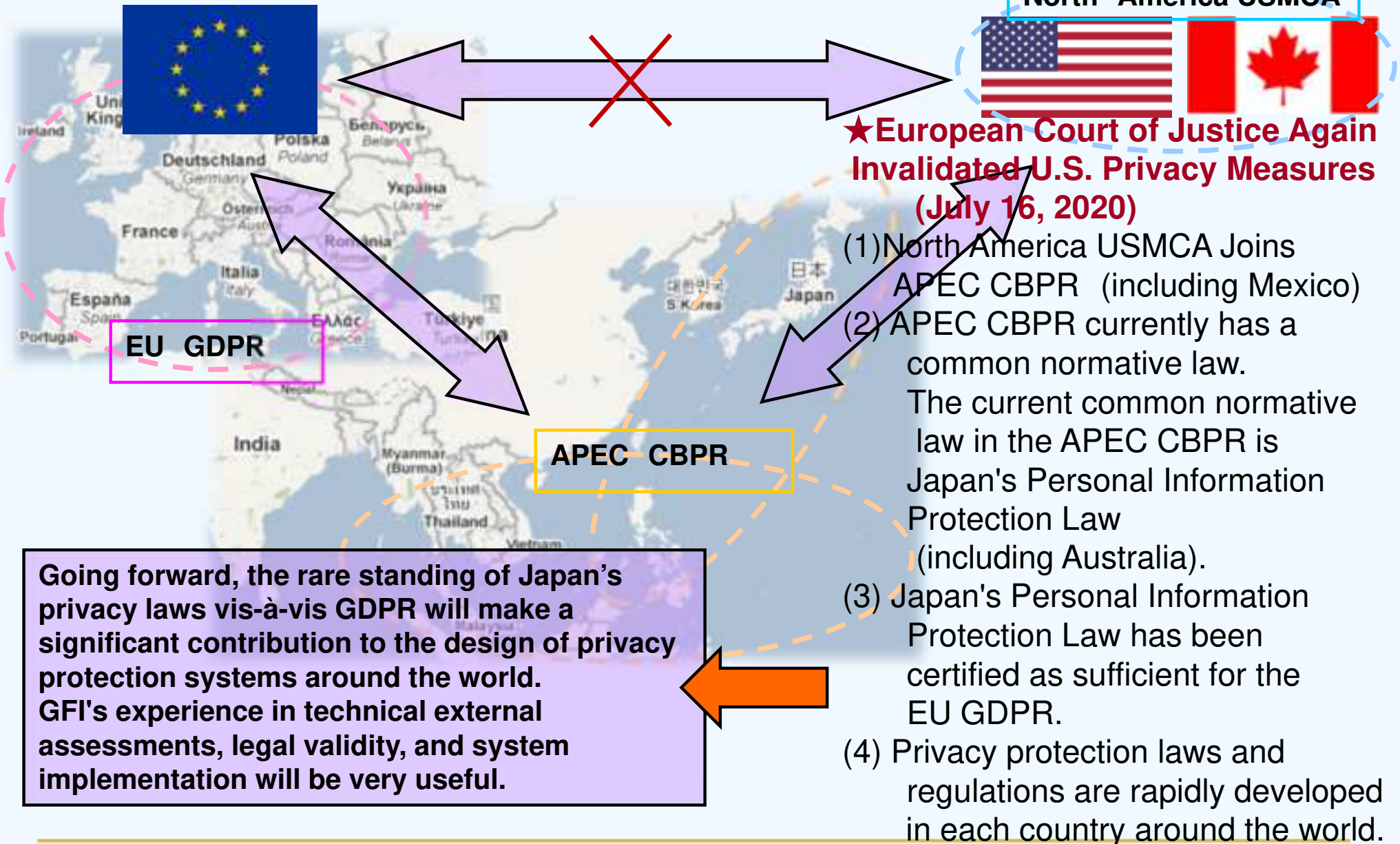
GFI Open Meta Image



GFI e-Tally® that match the times



One of the most important information assets of society in the future will be personal information. The figure below is an international correlation chart for privacy data.



The Role of GFI e-Tally® in the GDPR

EU GDPR Fines

For violation of the regulation, a maximum of €20 million or 4% of the previous year's turnover/income, whichever is higher.

Maximum possible fines

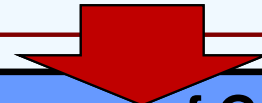


The provision of a maximum fine of 4% of the previous year's global sales, including those of group organizations, is noteworthy. However, it is understood that the sanction amount can be reduced based on Article 24, Article 25, Article 30, Article 58, Article 83, Article 84, etc. in addition to Article 32.



Sanctions will be determined after reviewing the security control measures adopted and implemented.

Sanctions are not covered by insurance.

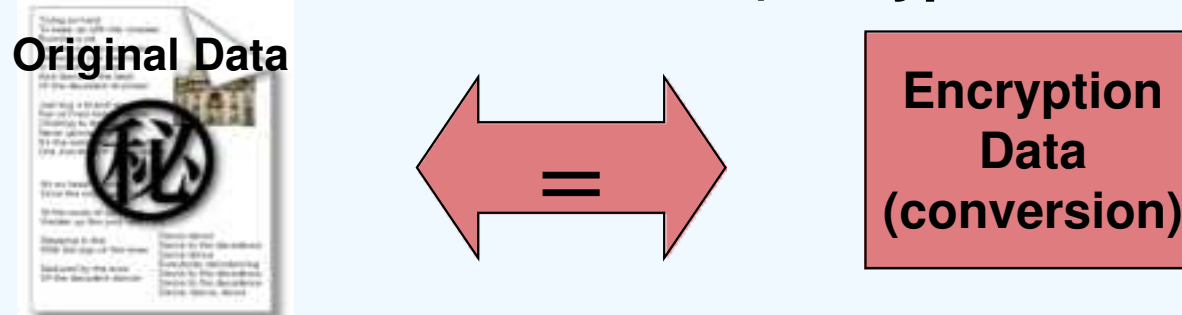


Based on the above, the proper use of GFI e-Tally® technology and the introduction of new GFI e-Tally® implemented new services will be a strong mitigating factor against GDPR fines.

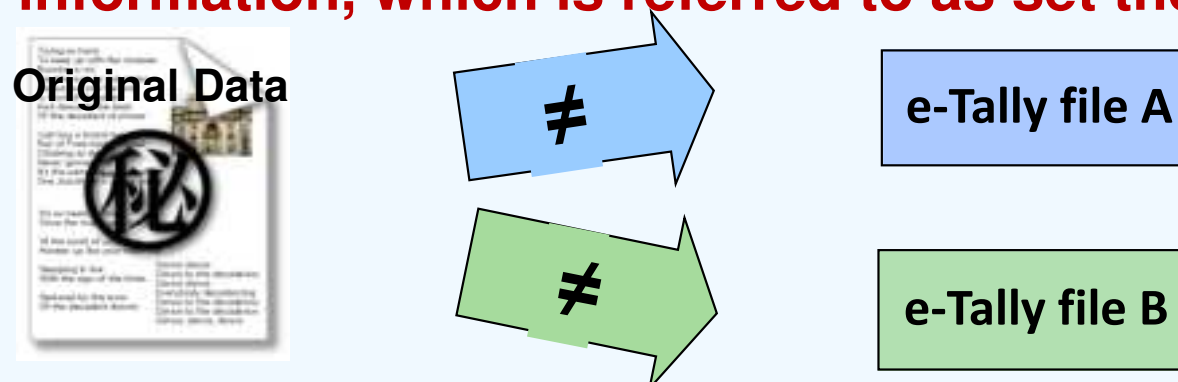
It is possible that they may not be subject to GDPR fines in the first place.

Encryption is minimal and insufficient

Existing encryption technology is "a technical process that creates a mapping, as in set theory. It can be said that it always has the possibility of inverse transformation (decryption/decryption).



GFI e-Tally® technology divides the original information at the bit level and generates a The GFI e-Tally® technology divides the original information at the bit level and generates an e-Tally file by performing a different sorting each time. **The technology generates a subset of the original information, which is referred to as set theory.**

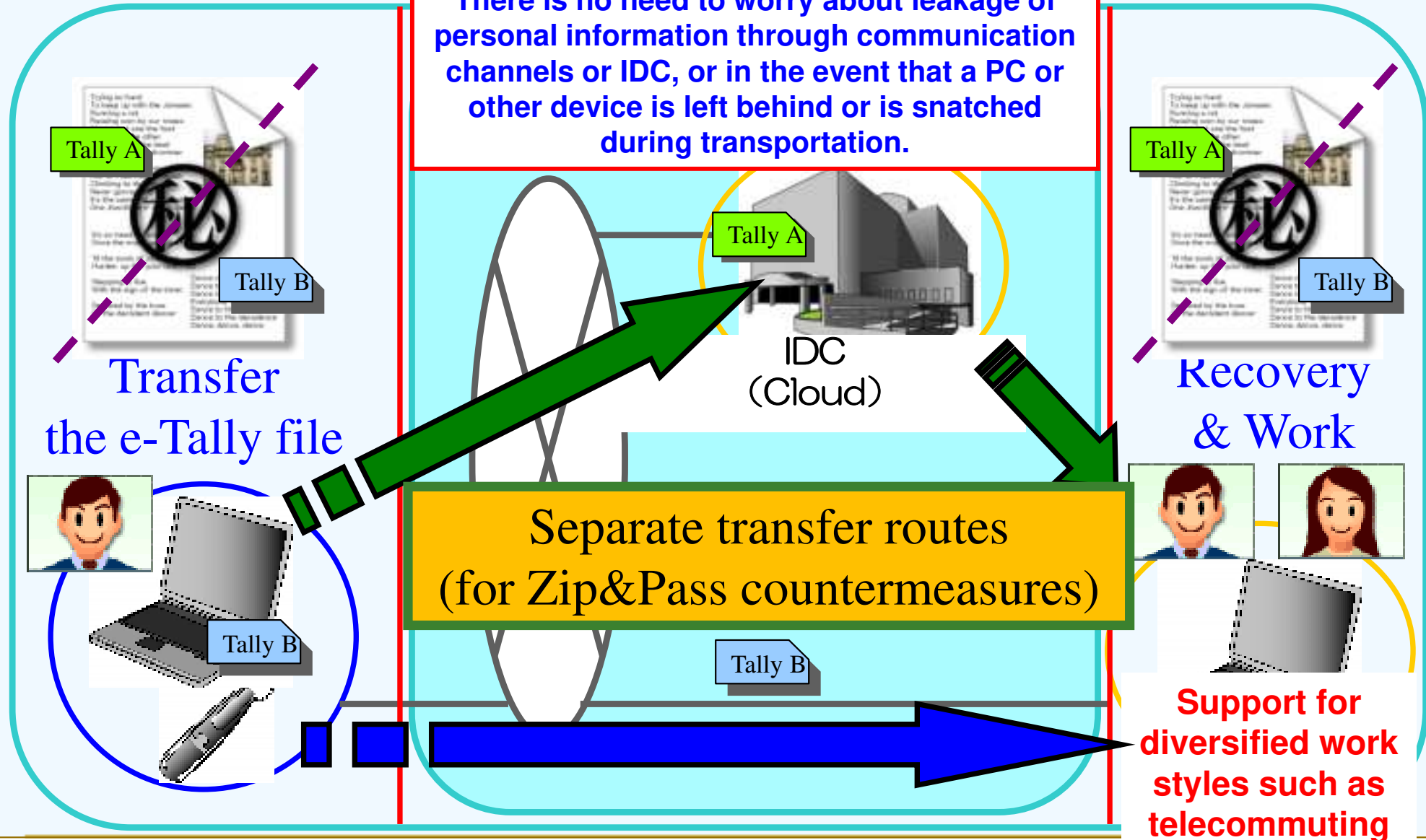


Of course, individual e-tally files alone cannot derive the original information

The e-Tally files (WARIFU) for the Transfer

NISC required confidential information transfer section

There is no need to worry about leakage of personal information through communication channels or IDC, or in the event that a PC or other device is left behind or is snatched during transportation.

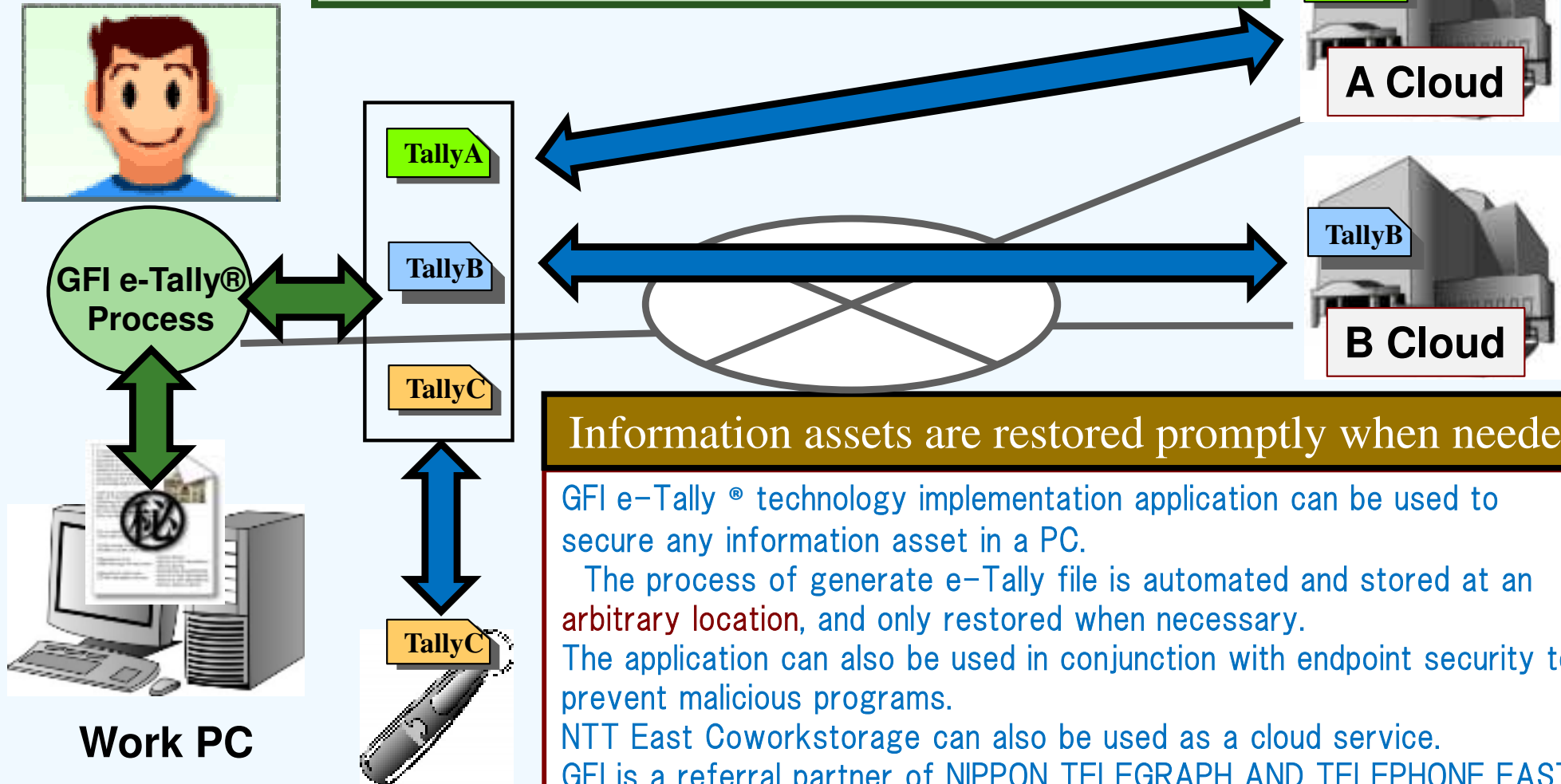


Current product overview chart



Data Management to Minimize Management Risk

Processes such as generate e-Tally file and decentralized storage are automated



Information assets are restored promptly when needed

GFI e-Tally® technology implementation application can be used to secure any information asset in a PC.

The process of generate e-Tally file is automated and stored at an arbitrary location, and only restored when necessary.

The application can also be used in conjunction with endpoint security to prevent malicious programs.

NTT East Coworkstorage can also be used as a cloud service.

GFI is a referral partner of NIPPON TELEGRAPH AND TELEPHONE EAST CORPORATION.

Cloud Utilization Service Security

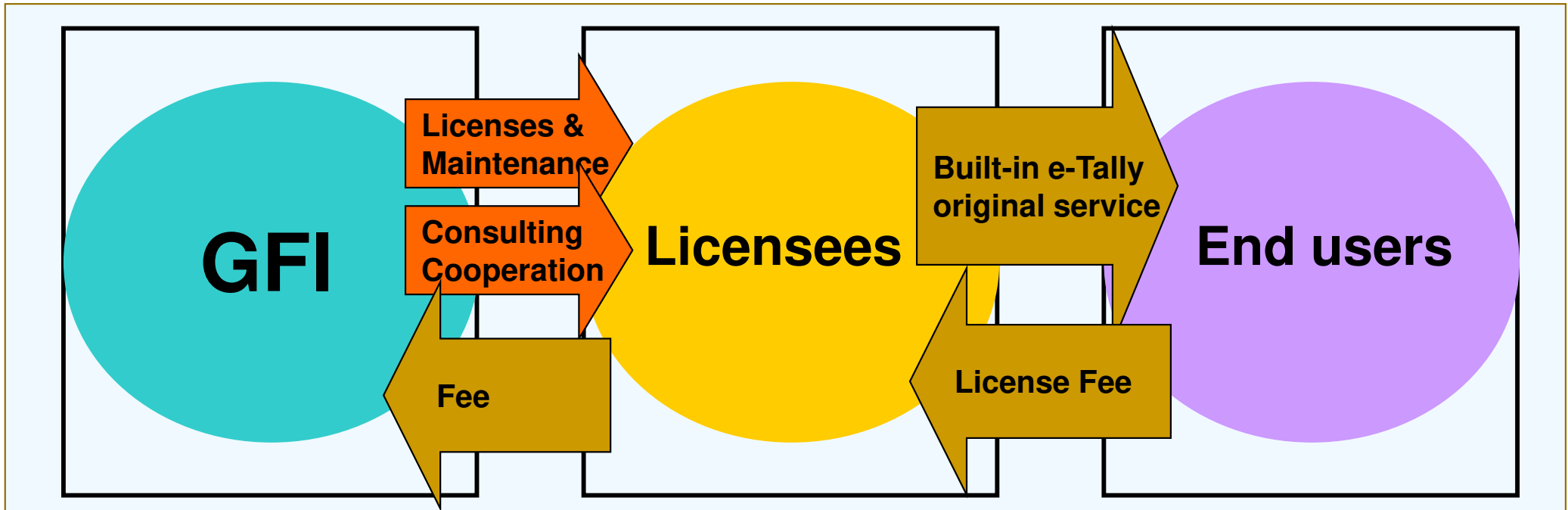


	Management Responsibility	Management Location	Services Development Concept	Data portability	GDPR and Privacy Act Assessment	Relevant Service Achievements
	Centralized Management Decentralized Management	Data owner Freedom Ease of use	user-oriented	user's point of view	Highly user-centered and highly addressed	International market results
Product A	×	×	×	△	△ * 1	○
Product B	×	△	×	△	△ * 1	○
GFI	○	○	○	○	○	×

* 1 : Currently using encryption in services

* 2 : GFI's business and services were prioritized in Japan based on exchanges of opinions with the Cabinet Office and the Ministry of Economy, Trade and Industry (with domestic results)

GFI e-Tally® Licensing Model Overview



Note:

Our current policy is to license our technology only for sound usage models, including from the perspective of social security, due to the high degree of confidentiality in principle. (Result of past discussions with information policy authorities)

References : http://www.gfi.co.jp/01news20131007_328.html

If you would like to use the e-Tally for practical use, etc., and not for product development (C, C++), please let us know how to use the e-Tally . we will be able to introduce you to products from our technology licensees that we think are appropriate for your needs. Please do not hesitate to contact us for further information.

Company Profile



Company Name (abbreviation): (Global Friendship Inc.) • GFI

Established: Aug 28, 1994

Capital • Fiscal Month: JPY 42,940,000 (as of Apr 2021) • December

Address: Sonet Sasazuka 102, 1-32-2 Sasazuka Shibuya-ku Tokyo Japan

Representative Director: Yutaka Yasukura

Patent Application: 10 (Maintained: Japan 9, US 1)

Independent Referrals: 4 (Tokyo University, Tokyo University of Science, Private Research Institutes, National Institute of Advanced Industrial Science and Technology)

Participating Groups:

Japan Institute for Promotion of Digital Economy and Community (JIPDEC)

Software Association (SAJ), Next Generation Sensor Association (JASST)

Japan External Trade Organization (JETRO), New Exporting Power Consortium

Smart IOT Acceleration Forum, ICF Business Acceleration Program

Alliance Certification: **TUV** Rhineland Group

Authorization: Ministry of Internal Affairs and Communications Notified
Telecommunications Carrier

Shareholders: Yutaka, IO Data, Others 145

Partnership with TÜV



- TÜV Rheinland group confirmed the cooperation for a wide range fields with GFI.
- Signed two partnership deed on January 27, 2005
By collaborating on international market intervention in information security area, we will promote solutions and services to improve information security culture



<http://www.gfi.co.jp/>

(2005/3/2 at TÜV Rheinland Japan Shin-Yokohama office)

Mr. K. K. Heinz, Executive Vice President, Asia Group and Yutaka Yasukura
President and Representative Director of GFI

International Perspectives

GFI was invited by the Royal Belgian Embassy to a meeting on 02/05/2020 at the Embassy to discuss various possibilities of expanding GFI and GFI e-Tally® business in the EU and from the EU to the rest of the world. The Belgian lawyers who attended the meeting also commented on the effectiveness of the GFI e-Tally® in complying with the GDPR and other issues, saying that this is a very powerful technology. Through the embassy, we were introduced to the competent department at the EU headquarters, local partners, and various preferential treatment programs for companies that are attracted to Belgium.



<http://www.gfi.co.jp/>

Wednesday, February 5, 2020, after the meeting at 13:30, Global Friendship Inc. photographed all participants in the lobby of the Belgian Embassy.

From left to right, Nicolas Hellemans, Attorney at Law, Dardewolf & Co, with interpreter in attendance; Valentin Doe Le Coeur, Attorney at Law, Dardewolf & Co; Laurent Verbist, Head of Asian Investment, hub.brussels (Brussels headquarters); Royal Belgian flag; GFI Representative Yasukura; Belgian Ministry of Finance Ms. Michaela Litondo, International Tax Specialist, Belgian Ministry of Finance, and Mr. William Delsem, Representative of the Royal Belgian Embassy, Trade Office of the Government of Metropolitan Brussels to Japan.

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GFI Establishment Philosophy:
「We want to make a lot of people happy」