



# Legislative Institutional Repository of Thailand

## Notes Before Completing the Application

*We have read and understood the notes concerning our application submission.*

True

*Reviewer Entry*

**Reviewer 1**

Comments:

**Reviewer 2**

Comments:

## CORE TRUSTWORTHY DATA REPOSITORIES REQUIREMENTS

### Background & General Guidance

### Glossary of Terms

## BACKGROUND INFORMATION

### Context

*R0. Please provide context for your repository.*

*Repository Type. Select all relevant types from:*

Domain or subject-based repository, Institutional repository, National repository system; including governmental, Publication repository, Research project repository

*Reviewer Entry*

**Reviewer 1**

Comments:

Accepted

**Reviewer 2**

Comments:

Accept

***Brief Description of Repository***

The Legislative Institutional Repository of Thailand (LIRT) is a national repository of parliamentary and legislative documents of Thailand. Initiated in 2010 as a Digital Library (DL) and Document Image Processing (DIP) System Development Project under the E-Parliament Plan, the repository is aimed to provide information service and support to the parliament. Since the beginning, the repository has been managed by the Information Technology Resources Development Division under the Bureau of Academic Services and hosted by the Bureau of Information Technology of the Secretariat of the House of Representatives, National Assembly of Thailand.

The repository was designed and developed to collect, store, preserve, disseminate, and provide access to legislative digital resources for members of the Parliament and members of the committees in order to fulfill the duties of enactment and passing of laws, control of the administration of State affairs, and giving approval for important affairs of the country. The repository is also aimed to provide access for the Parliamentary staff and officers to conduct research and render academic support and services to the parliamentary members.

Currently, the repository contains more than 300,000 items. Most of them are open to public under a Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 license (CC BY-NC-ND 3.0) and can be accessible at <https://dl.parliament.go.th>. Some collections are available under restriction.

*Reviewer Entry*

**Reviewer 1**

Comments:

Accepted

**Reviewer 2**

Comments:

Accept

***Brief Description of the Repository's Designated Community.***

The repository collects, preserves and provides access to the following designated community:

1. Members of the parliament and members of the committees: to use as a main source of legislative documents and references.
2. Officers under the Bureau of Academic Services: to use as a source for studying, examining, analyzing, conducting academic researches and gathering academic information, and to submit and deposit newly created publications including academic books, parliamentary journals, political literatures, articles and research reports.
3. Parliamentary officials: to use as a source in acquiring information and providing academic recommendations and services, as needed, to the members of the parliament, the House of Representatives, the bureaus in the Secretariat of the House of Representatives and parliamentary personnel.
4. Grantors and Grantees: to store and preserve research outputs including theses and research reports funded by the Secretariat of the House of Representatives, National Assembly of Thailand.
5. Government agencies: to deposit resources related to legislative and parliamentary process.
6. Researchers and educators: to search and retrieve resources in Law, Political science, Public administration and other fields related to legislative process.
7. General public: to search and retrieve resources and reference documents in political and administrative issues.

*Reviewer Entry*

**Reviewer 1**

Comments:  
Accepted

**Reviewer 2**

Comments:  
Accept

***Level of Curation Performed. Select all relevant types from:***

- A. Content distributed as deposited, B. Basic curation – e.g. brief checking; addition of basic metadata or documentation, C. Enhanced curation – e.g. conversion to new formats; enhancement of documentation

*Reviewer Entry*

**Reviewer 1**

Comments:  
Accepted

**Reviewer 2**

Comments:  
Accept

## *Comments*

The repository performs different levels of curation tasks to different types of resources as follows:

1. A. Content distributed as deposited: Level A is performed for resources acquired from the Secretariat of the Senate, the King Prajadhipok's Institute and the Thailand Science Research and Innovation (TSRI).
2. B. Basic curation: Level B is performed for resources created by the Academic Services division and the Research and Development division by revising and adding additional metadata elements such as Type, Issue date, No. of pages, Rights, Classification no., Series, Term and Session for meeting reports, and adding watermark.
3. C. Enhanced curation: Level C is performed for research publications funded by the Secretariat of the House of Representatives, National Assembly of Thailand. The major tasks performed are adding bookmarks, watermarking, converting files to PDFs, and renaming files.

### *Reviewer Entry*

#### **Reviewer 1**

Comments:  
Accepted

#### **Reviewer 2**

Comments:  
accept

## *Insource/Outsource Partners. If applicable, please list them.*

The repository incorporated insource and outsource partners as follows:

Insource partners:

1. The Information Technology Resources Development Division is responsible for converting files, bookmarking, watermarking, adding metadata, inputting data, scanning and administering data and contents structure of the repository.
2. The Academic Services Division 1, 2, 3 and the Research and Development Division is responsible for creating and submitting the digital files to the repository.
3. The Bureau of Information Technology is responsible for administering and maintaining hardware and computer network.

Outsource partners:

1. The Bureau of Parliamentary Proceedings, the Secretariat of the Senate is responsible for providing documents to the Information Technology Resources Development Division, as per requested, for data preservation and dissemination.
2. The King Prajadhipok's Institute grants permission for the Information Technology Resources Development Division to store, preserve, and disseminate the King Prajadhipok's publications which consists of independent studies (as the scholarly outputs from the Executive Program for Parliamentary Officers), research reports, public consultation reports and other related publications on the repository.
3. The Thailand Science Research and Innovation (TSRI) delivers TRSI publications which consists of research reports, TRF policy briefs, TRF forums and TRF bulletins to the Information Technology Resources Development Division for managing and disseminating on the repository.
4. The STAQ Technologies Co., Ltd. is responsible for development and maintenance of the repository which includes the DSpace system and the Document Image Processing (DIP) system.

*Reviewer Entry*

**Reviewer 1**

Comments:  
Accepted

**Reviewer 2**

Comments:  
Accept

***Summary of Significant Changes Since Last Application (if applicable).***

*Reviewer Entry*

**Reviewer 1**

Comments:

**Reviewer 2**

Comments:

***Other Relevant Information.***

The repository uses DSpace software to manage all digital resources. Additional software applications are developed and integrated to accommodate and strengthen the work processes which include the front-end interface, the Document Image Processing (DIP) system, the Digital Rights Management (DRM) system, the Lightweight Directory Access Protocol (LDAP), the Statistics and Reporting system and a mobile application "LIRT-Parliament DL" on iOS and Android platform.

The contents' structure of the repository are categorized into 4 groups as follows:

1. Legislative resources according to the Parliament's authority which consists of bills, constitutional drafts, interpellations, motions, agenda, summary of the sittings, minutes of the sittings, documents for consideration, committee reports and other documents relating to enactment process of the Parliament.

2. Works of the Parliament which consists of summary of parliament's works, works of Members of the Parliament, works of Parliament's staff and officers, journals and newsletters, and resources funded by the Parliament.

3. Resources supporting the missions of the Parliament which consists of academic documents, research reports, government publications, publications from political parties, general books, general journals and newspapers.

4. Laws published in the Royal Thai Government Gazette which consists of Constitutions and Administrative Constitutions, Acts, Emergency, Decrees, Royal decrees, declarations and orders, interpellations and decisions.

Most resources can be accessible and usable under a Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 license (CC BY-NC-ND 3.0), except for research reports by institutes and independent scholars under Group 2 (collection no. 2.5.3) which can be readable online but cannot be downloadable. In Group 3, internal publications, general journals and newspapers (collection no. 3.2, 3.3, and 3.4 respectively) can only be previewed for 7 pages. For resources created and owned by other organizations other than the Bureau of Academic Services of the Secretariat of the House of Representatives, items can be accessible under license or copyright as stated on the item page.

Data in Group 1 and Group 2 are the core contents of the repository and shall be the main focus for certification.

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:  
Accepted

##### **Reviewer 2**

Comments:  
accept

## **ORGANIZATIONAL INFRASTRUCTURE**

### **1. Mission/Scope**

*R1. The repository has an explicit mission to provide access to and preserve data in its domain.*

## ***Compliance Level:***

4 – The guideline has been fully implemented in the repository

### ***Reviewer Entry***

#### **Reviewer 1**

Comments:

4 – The guideline has been fully implemented in the repository

#### **Reviewer 2**

Comments:

4 – The guideline has been fully implemented in the repository

Accept

## ***Response:***

The Legislative Institutional Repository of Thailand (LIRT) was developed in 2011 under the Digital Library (DL) and Document Image Processing (DIP) System Development Project to meet the Secretariat of the House of Representatives' strategy "To strengthen and develop an information system and Information Technology, leading to be Legislative Resource Center and e-Parliament of the National Assembly of Thailand".

The objective of the project is to develop a modern and robust digital repository system which is capable to collect, store and preserve the legislative and parliamentary resources in order to render academic services to serve the members of the parliament, members of the committees, parliamentary officials, and related groups of persons. The system is also aimed to distribute and disseminate government information for public access through appropriate channels and networks.

The Information Technology Resources Development division which is a sub-division of the Bureau of Academic Services, the Secretariat of the House of Representatives, is involved in the whole process from the point of technical infrastructure planning, design and development, software design and development, data collection and acquisition, data conversion, content's structure design and creation, data input, metadata entry, rights management, system integration and data exchange, to promotion and support [1.1].

The repository is publicly launched in 2012 in the "Digital resources service @ The Parliament" seminar at the Parliament House of Thailand to acknowledge the Parliamentarians of the new service [1.2].

Since 2012, the repository continues its roles in collecting, storing, preserving, disseminating and providing access for legislative resources to all members in the Parliament house including government agencies, donors, researchers, educators and general public. Under the current vision of "Being an excellent legislative repository which preserves and provides services to support the duties of the parliament community, and promotes the participatory learning of the citizens", the repository operates under three main missions: 1. To develop the repository to be a primary source of legislative and administrative documents to support the Parliament community 2. To preserve legislative and parliamentary resources for long-term access service and reference service to the parliamentary community and general public. 3. To Promote information literacy in legislation and participatory administration to the citizens [1.3].

Being a core information system under the Digital Parliament Development Plan 2018-2022 [1.4], the repository is hosted by the Information Technology department and regularly maintained by the STAQ Technologies Co., Ltd. [1.5] [1.6] with appropriate budget and staffing allocated to the Bureau of Academic Services under the Secretariat of the House of Representatives, National Assembly of Thailand.

--- Evidence Links ---

[1.1] The Information Technology Resources Development division: roles and responsibilities The webpage states roles and responsibilities of the Information Technology Resources Development which consists of developing, managing and administering library systems, in-house databases, online databases and library website.

<https://dl.parliament.go.th/page/aboutus#responsibility>

[1.2] Press release of the “Digital resources service @ The Parliament” seminar at the Parliament House of Thailand.

[https://drive.google.com/file/d/1eHG1ZblybyXNQe00BDx90TPHjF3K\\_M9c/view](https://drive.google.com/file/d/1eHG1ZblybyXNQe00BDx90TPHjF3K_M9c/view)

[1.3] The LIRT repository: vision and missions.

<https://dl.parliament.go.th/page/aboutus#policy>

[1.4] The Digital Parliament Development Plan: a driving plan 2018-2022: executive summary The document states the targets, driving directions and operational plans to implement the Digital Parliament Development Plan 2018-2022 in accordance with three strategies: 1. System development and integration 2. ICT infrastructure and security development and 3. Human resource development in ICT.

<https://drive.google.com/file/d/1UqgOBFLW97ZYhPxhJJAoXsialFEnpOh8/view?usp=sharing>

[1.5] Document Image Processing (DIP) System: maintenance plan. The document states Term of Reference (TOR) of the DIP system maintenance which includes the LIRT repository, DRM system, search server and other peripheral equipment.

<https://drive.google.com/file/d/1ipWvmSyLbB0hqSYSgb0y19luKhmlgzch/view?usp=sharing>

[1.6] The Digital Library Development Project: maintenance report

<https://drive.google.com/file/d/1CdXp4htmlGprEyhIEfVe-Hvo7aKAbbtN/view?usp=sharing>

### *Reviewer Entry*

#### **Reviewer 1**

Comments:  
Accepted

#### **Reviewer 2**

Comments:



accept

## 2. Licenses

***R2. The repository maintains all applicable licenses covering data access and use and monitors compliance.***

### ***Compliance Level:***

4 – The guideline has been fully implemented in the repository

#### ***Reviewer Entry***

##### **Reviewer 1**

Comments:

4 – The guideline has been fully implemented in the repository

##### **Reviewer 2**

Comments:

4 – The guideline has been fully implemented in the repository  
accept

### ***Response:***

The repository maintains and publishes conditions and licenses covering data deposit, data access and use on the repository's main page [2.1] as follows:

#### Data Deposition

The data depositor of the repository is restricted to the parliamentary officials, grantees, and organizations under an agreement or a Memorandum of Understanding (MOU) [2.2]. The deposited data must be outputs from Members of the Parliament, members of the committees, parliamentary officials, or funded/supported by the Parliament [2.3]. Contents of the deposited data must relate to the parliamentary business and beneficial to legislative process without contrary to moral and ethical principles, Intellectual Property Law, Copyright Act and Thailand's Personal Data Protection Act [2.4]. The depositors must sign a Data deposition form to transfer rights of adaptation and distribution to the Secretariat of the House of Representatives [2.5].

#### Data Access and Use

The repository categorizes users into two groups which are 1. Members of Parliament and 2. General users as Public access [2.6]. Members of the Parliament are allowed to access all types of contents via website's URL and mobile application by logging in to the system via LDAP Authentication [2.7] whereas general users with anonymous access (no

login required) are allowed to browse and search for all resources but may be unable to access resources in some collections [2.8]. Printing and downloading are also allowed according to permissions.

## Data Dissemination

Almost of resources in the repository are licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 Thailand License (CC BY-NC-ND 3.0 TH) [2.9]. Users are allowed to use and share resources as long as an appropriate credit is given and the resources are used without modifications for non-commercial purpose [2.10]. Users can observe statements of rights on the repository's main page, item's display page, and metadata elements "dc.rights" and "dc.access.rights" of each item respectively [2.11].

--- Evidence Links ---

[2.1] The LIRT repository: conditions of data deposition

The webpage states the conditions of data deposition.

<https://dl.parliament.go.th/page/repository#repository>

[2.2] Example of letter from the King Prajadhipok's Institute for granting permission to the Secretariat of the House of Representatives to preserve and distribute research reports in the repository

Example of an agreement to store and publish data in the repository.

<https://drive.google.com/file/d/1Pr6iLPYUxz8xGAvzMAMzRJdYhwS4vdxD/view?usp=sharing>

[2.3] Example of research grant agreement between the Secretariat of the House of Representatives and grantee

<https://drive.google.com/file/d/1QsUylefOkVL52IGkHj5pdFkHJ3WSJcjm/view?usp=sharing>

[2.4] The LIRT repository: related laws

<https://dl.parliament.go.th/page/aboutus#laws>

[2.5] The LIRT repository: data deposition form

<https://dl.parliament.go.th/themes/Mirage/images/deposit.pdf>

[2.6] The LIRT repository: conditions of usage and licenses

<https://dl.parliament.go.th/page/aboutus#usage>

[2.7] Example of system maintenance report: LDAP authentication system

This document is used as an evidence to ensure that the parliamentary members are authenticated for system access.

[https://drive.google.com/file/d/1FMXouAg14tSZ\\_dKrFbaxn0sSuK5KB3MU/view?usp=sharing](https://drive.google.com/file/d/1FMXouAg14tSZ_dKrFbaxn0sSuK5KB3MU/view?usp=sharing)

[2.8] The LIRT repository: data access and usage

<https://dl.parliament.go.th/page/aboutus#access>

[2.9] Example of Creative Commons logo displayed on item record page

<https://drive.google.com/file/d/1dVS-rgAeJWDsfCPWhuXQ4AfRVEXYFIZs/view?usp=sharing>

[2.10] Creative Commons license statement

<https://creativecommons.org/licenses/by-nc-nd/3.0/th/>

[2.11] Example of Rights statement recorded in metadata element 'dc.rights'

<https://drive.google.com/file/d/1mhfH80S2fIYS97-Fp02ODQgvLLnbo1li/view?usp=sharing>

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:

Accepted

##### **Reviewer 2**

Comments:

accept

### **3. Continuity of access**

*R3. The repository has a continuity plan to ensure ongoing access to and preservation of its holdings.*

#### ***Compliance Level:***

3 – The repository is in the implementation phase

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:

3 – The repository is in the implementation phase

##### **Reviewer 2**

Comments:

3 – The repository is in the implementation phase

Accept at Level 3

#### ***Response:***

Since publicly launched in 2012, the repository has continued to serve the parliamentary community and general public by preserving and providing 24/7 access to legislative and parliamentary documents. The Information Technology Resources Development division under the Bureau of Academic services has undertaken full responsibility in collecting, preserving and disseminating all digital resources. The STAQ Technologies Co., Ltd., an outsource partner, has undertaken a main role in (software) system monitoring and support under the 24-hour recovery guarantee contract [3.1] while the Bureau of Information Technology is responsible for monitoring hardware and network infrastructure in order to ensure that all resources are always available and accessible without harm.

With continuous support from the Secretariat of the House of Representatives, the repository is currently operated under the LIRT's 5-year Development Plan 2021-2025 [3.2] with budget allocation on yearly basis according to the Thai government's budgeting system [3.3] [3.4]. The 5-year plan states the vision, missions, goals and action plans for five-year period which includes enhancement of the repository to meet the international information system standards and to conform to technical requirements of the Parliament's new data center, the revision of the repository's preservation plan, the improvement of system maintenance procedures and the development of human resource in the operation of repository.

In managing risks which may harm the repository, the Bureau of Information technology strictly follows the IT Risk management Plan which is based on COSO ERM (Enterprise Risk Management – Integrated Framework) [3.5] and the IT security guidelines [3.6] to safeguard the repository.

To manage unprecedented incidents which may affect the continuity of access to the repository such as natural disasters, vulnerability, threats, hardware failures or other types of unexpected incidence, the bureau of Information Technology acts upon the Business Continuity Plan (BCP) [3.7] and the IT Contingency Plan [3.8] to prevent data corruption, data damage and data loss in order to ensure the accessibility and long-term preservation of the repository.

The repository begins to develop a Succession Plan in March 2021 [3.9] to prepare for uncertainty of the repository's management and operation and to ensure the lifelong preservation and accessibility of the parliamentary community and general public. Since the beginning of 2021, the Information Technology Resources Development division under the Bureau of Academic services has started to cooperate with the Bureau of Information Technology to relocate the repository's servers to a new data center under the supervision of the Bureau of Information Technology. Knowledge on management and operation of the repository is being shared and transferred to the Bureau of Information Technology's staff.

--- Evidence Links ---

[3.1] The STAQ Technologies Co., Ltd.: maintenance contract

<https://drive.google.com/file/d/1BqFqbzFvnup-5hBqMET-dVGJmt75tLLr/view?usp=sharing>

[3.2] The LIRT repository: 5-year development plan 2021-2025

<https://drive.google.com/file/d/1gQh-4Z80gT93QaOazUPUY-uP8QIMAzvU/view?usp=sharing>

[3.3] The LIRT repository: budget allocation memo

[https://drive.google.com/file/d/1wCHP5pG0\\_URkhdANhAejinOMt1BuoKC6/view?usp=sharing](https://drive.google.com/file/d/1wCHP5pG0_URkhdANhAejinOMt1BuoKC6/view?usp=sharing)

[3.4] The LIRT repository: budget allocation details

<https://drive.google.com/file/d/1dUIXBYanJ87Hkxwj7zZ7XTnYHpe9XLku/view?usp=sharing>

[3.5] The Parliament's IT risk management plan

<https://drive.google.com/file/d/1wyUJBLvKGoyAHz6CnPeic6Fc-vKLi6ox/view?usp=sharing>

[3.6] The Parliament's IT security guidelines

<https://drive.google.com/file/d/1as-RkpxoKgKzSvDSvyiTUVXDIY2m26Xe/view?usp=sharing>

[3.7] The Parliament's IT business continuity plan

[https://drive.google.com/file/d/1-0KnLI0OIXXcutgx3Q\\_U5BDgO12O\\_ft/view?usp=sharing](https://drive.google.com/file/d/1-0KnLI0OIXXcutgx3Q_U5BDgO12O_ft/view?usp=sharing)

[3.8] The Parliament's IT contingency plan

[https://drive.google.com/file/d/1czUxTh8jaGJ0Gq6wYr\\_mgjMwxBXkzgWm/view?usp=sharing](https://drive.google.com/file/d/1czUxTh8jaGJ0Gq6wYr_mgjMwxBXkzgWm/view?usp=sharing)

[3.9] The LIRT repository: succession plan

<https://drive.google.com/file/d/1Emgi7GOE-hzPykt5XnGhI7Dz-xAC2vmw/view?usp=sharing>

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:  
Accepted

##### **Reviewer 2**

Comments:  
accept

## **4. Confidentiality/Ethics**

*R4. The repository ensures, to the extent possible, that data are created, curated, accessed, and used in compliance with disciplinary and ethical norms.*

***Compliance Level:***

3 – The repository is in the implementation phase

### *Reviewer Entry*

#### **Reviewer 1**

Comments:

3 – The repository is in the implementation phase

#### **Reviewer 2**

Comments:

3 – The repository is in the implementation phase

### *Response:*

#### Ethics and Code of Conduct

The Bureau of Academic Services (BAS) which is the host of the LIRT repository is operated under the Secretariat of the House of Representatives, National Assembly of Thailand. All the BAS staff are abided by the Rules of Parliamentary Officials Act B.E. 2554 (2011) [4.1 TH, EN], the Code of Ethics for Parliamentary Officials [4.2 TH, EN] and the Announcement of the Secretariat of House of Representatives in the subject of Declaration of Intent on Integrity in Administration [4.3 TH, EN].

Apart from the general ethics, academic ethics is mentioned in the Handbook for Academic Writing (Revised edition, B.E. 2563 (2020)) [4.4] created by the Bureau of Academic Services. This instruction manual is used by all academic staff particularly the academic staff in Academic Services Division 1, 2, 3 and Research and Development Division who perform duties of creating resources to support the legislative activities of the parliamentary members and committees (Please refer to R0: Insource partners).

For research projects granted by the Secretariat of the House of Representatives, the Research Committee [4.5] is responsible for overseeing the overall research processes to ensure that all research activities are carried out in accordance with the Parliament's Regulations in Research and Development B.E. 2546 [4.6]. The grantees are advised to follow the Research Code of

Conduct issued by the National Research Council of Thailand (NRCT) as a national guideline which is applicable to researchers and academics in all disciplines, and other specific ethical regulations in accordance with research topic such as the National Policy Guidelines for Human Research 2015 which is used as a guideline for research in social science and biomedical areas [4.7].

The NRCT Research Code of Conduct defines the Research Data Management and Curation as

“ ‘Management of Research Data and Materials’ means curation of data, evidences, and materials related to research activities such as raw data, experimental plan, data analysis, research results, communication data between organizations, etc. Research data and materials shall be orderly/systematically, properly, and securely curated in good condition within a time period as indicated by the researchers' affiliations, funding agencies and associated institutions or

in an appropriate time period depending on the types of data for the purpose of transparency, easy finding, and readiness for examination upon request.” This conduct is mentioned in Section 2: Ethical guidelines in research conduct in both “During the research process” and “After the completion of research” [4.8 TH, EN].

#### Confidentiality

According to the policy, the repository does not store or disseminate any confidential data in the repository. All legislative resources according to the Parliament’s authority including works of the Parliament and resources supporting the missions of the Parliament have been classified (if applicable) under the Rule of Maintenance of Official Secrets, B.E. 2544 (2001) [4.9 TH, EN], and verified against the Official Information Act B.E. 2540 [4.10 TH, EN] and the Commission of Offences relating to Computer Act, B.E. 2550 (2007) (2017 amended) [4.11 TH, EN]. Only upon approval by the head of office, the official documents will then be issued and disseminated to other divisions.

In acquisition and data submission process, the repository staff is responsible for re-checking each document and ensuring that all publications to be submitted to the repository are conformed to the acquisition guidelines, the moral and ethical principles, the Intellectual Property Law, the Copyright Act and the Personal Data Protection Act B.E. 2562 [4.12 TH, EN]. If confidential or inappropriate documents were found, the acquisition staff will sort out and return those documents to the origin without inputting into the repository.

For publications containing sensitive or personal information such as personal identification number, date of birth, home address or mobile number, etc., the responsible staff will examine and conceal the contents, if necessary, by data masking the sensitive texts or replacing sensitive images such as the National Identification card or the House registration with explanatory texts before submitting/inputting data into the repository. All submitted data will be reviewed by a librarian in the review and quality control process. If the defects were found, the librarian will notify the responsible staff for correctness. After final reviewing by a librarian, data will then be published in the repository [4.13 TH, EN].

Most publications including laws published in the Royal Thai Government Gazette are available and accessible under a Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 license, except for some collections which may be available under restriction (Refer to R0: Other relevant Information).

If the repository staff performs reasonable suspicions or illegal acts in releasing or distributing critical or sensitive data of persons or organizations, the responsible officer will report the case to the head of division for investigation and treatment in accordance with the Computer-related Crime Act 2007 (2017 amended).

Currently, the Information Technology Resources Development division is on process of developing an action plan to support the Personal Data Protection Act B.E. 2562 which is a new act to be enforced in June 2022. The staff’s manual will be updated to comply with the new act and practices will be conveyed to the responsible staff.

--- Evidence Links ---

[4.1] The Rules of Parliamentary Officials Act, B.E. 2554 (2011)

TH: <https://drive.google.com/file/d/1ILLV-VHPOqEE8vspESN8freCWFKvhJcu/view?usp=sharing>

EN: <https://drive.google.com/file/d/1IPR0WCRVrLgbgEeltevFBq66S00rEVg3/view?usp=sharing>

[4.2] The Code of ethics for parliamentary officials: summary of selected articles

TH: [https://drive.google.com/file/d/1WO6yAsBOJ54DxRRB9egLP7\\_plvcR5bgK/view?usp=sharing](https://drive.google.com/file/d/1WO6yAsBOJ54DxRRB9egLP7_plvcR5bgK/view?usp=sharing)

EN: Summary of selected articles

<https://drive.google.com/file/d/1LFbBjGG7GC6GMzr7bl4tYXMdcnMaBEMi/view?usp=sharing>

[4.3] Declaration of Intent on Integrity in Administration

TH: <https://drive.google.com/file/d/1uWr1q7fqG3dY2wtGhHkOIGuyNKsvEkeC/view?usp=sharing>

EN: <https://drive.google.com/file/d/17MYbUkOKm5LRdlAto38yms9RN67iTats/view?usp=sharing>

[4.4] The Handbook for Academic Writing (Revised edition, B.E. 2563 (2020))

The contents in Chapter 2, Topic 4 describe the academic ethics of writers which includes information about fabrication, falsification, infringement, fair use, copyrights law and plagiarism.

[https://drive.google.com/file/d/1OoWnbajzSJZ-7Ai-fAoJVqO24a\\_GD40/view?usp=sharing](https://drive.google.com/file/d/1OoWnbajzSJZ-7Ai-fAoJVqO24a_GD40/view?usp=sharing)

[4.5] The appointment for Research and Development committee

[https://drive.google.com/file/d/1zg5hR0PqT\\_7w31jDLBHpRgMEp2XDrxl/view?usp=sharing](https://drive.google.com/file/d/1zg5hR0PqT_7w31jDLBHpRgMEp2XDrxl/view?usp=sharing)

[4.6] The Parliament Regulations on Research and Development 2003

<https://drive.google.com/file/d/1OmU7CRMCTkufuOmW-jaizwVwpwbUiar5/view?usp=sharing>

[4.7] The National Policy Guidelines for Human Research 2015

<https://drive.google.com/file/d/1hEHHY3vaECWIEkDZfNd-GIsxHviedoSla/view?usp=sharing>

[4.8] Research Code of Conduct, the National Research Council of Thailand

This document mentions about research process, code of conduct, code of practice, research professional, research ethics, researchers, research communities, authorship, conflict of interest, plagiarism, etc.

TH: [https://drive.google.com/file/d/1wxDQxFj9\\_cV8SU7zoZKcH1mSHPaC-ckA/view?usp=sharing](https://drive.google.com/file/d/1wxDQxFj9_cV8SU7zoZKcH1mSHPaC-ckA/view?usp=sharing)

EN: A summary

<https://drive.google.com/file/d/1irhARBkSFFuxKtLbfs9rtGU61daHllom/view?usp=sharing>

[4.9] The Rule of Maintenance of Official Secrets, B.E. 2544 (2001)

TH: [https://drive.google.com/file/d/10WMMya\\_03GH5pCmwMbnVZnFm0HMyabTu/view?usp=sharing](https://drive.google.com/file/d/10WMMya_03GH5pCmwMbnVZnFm0HMyabTu/view?usp=sharing)

EN: <https://drive.google.com/file/d/1O3-ltM3UhyWAp-KzTGbCDfQz1QyVs2nh/view?usp=sharing>

[4.10] The Official Information Act, B.E. 2540



TH: [https://drive.google.com/file/d/1Y\\_PYfr\\_Z3rl\\_m7XZnibjdRjDvfU-ho81/view?usp=sharing](https://drive.google.com/file/d/1Y_PYfr_Z3rl_m7XZnibjdRjDvfU-ho81/view?usp=sharing)

EN: <https://drive.google.com/file/d/1udPC4TjhLo36zgniCZdzLJWJi-B3HKWs/view?usp=sharing>

[4.11] The Commission of Offences relating to Computer Act, B.E. 2550 (2007) (2017 amended)

TH: [https://drive.google.com/file/d/1WZPT9L\\_hUHq5I5aD6wuaqVexGlvWEqmS/view?usp=sharing](https://drive.google.com/file/d/1WZPT9L_hUHq5I5aD6wuaqVexGlvWEqmS/view?usp=sharing)

EN: <https://drive.google.com/file/d/1f6xbqxpceQAJXuZ3Gtuc1yNnZbUZJrNi/view?usp=sharing>

[4.12] The Personal Data Protection Act, B.E. 2562

TH: [https://drive.google.com/file/d/1T2k6X8CAV2Vt8xXDo-cK-\\_23U1X41nP3/view?usp=sharing](https://drive.google.com/file/d/1T2k6X8CAV2Vt8xXDo-cK-_23U1X41nP3/view?usp=sharing)

EN: <https://drive.google.com/file/d/1Q4IJ37nltgTDaOUW-OhIKQWzV-hXz1bk/view?usp=sharing>

[4.13] The LIRT's staff manual: conditions of management and access to confidential documents and documents containing sensitive/personal data

TH: <https://drive.google.com/file/d/1VahF7DSFDEd9eRrrWuk15aa02MNwOhwK/view?usp=sharing>

EN: <https://drive.google.com/file/d/12F1UKCY8deUnTKWEFr61ayzGByViZ4fX/view?usp=sharing>

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:

Accepted

##### **Reviewer 2**

Comments:

accept

## **5. Organizational infrastructure**

***R5. The repository has adequate funding and sufficient numbers of qualified staff managed through a clear system of governance to effectively carry out the mission.***

### ***Compliance Level:***

4 – The guideline has been fully implemented in the repository

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:

4 – The guideline has been fully implemented in the repository

## Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Accept

### *Response:*

The repository is managed under the Secretariat of the House of Representatives, National Assembly of Thailand which comprises 23 offices, 3 bureaus and 1 unit. The Bureau of Academic Services, which is a bureau under the Secretariat of the House of Representatives, consists of 8 divisions which are 1. The General Administration Division 2. The Library Division 3. The Information Technology Resources Development Division 4. The Academic Services Division 1 5. The Academic Services Division 2 6. The Academic Services Division 3 7. The Research and Development Division and 8. The Museum and Archives Division [5.1 1, 2].

The Information Technology Resources Development division is the main division responsible for managing and operating the repository [5.2] while the office of Information Technology is responsible for providing technical infrastructure and hosting service under the IT security policy and plan of the Parliament, including giving advices on Information Technology and Communications issues.

Running the repository as a core academic service, the Bureau of Academic Services is funded by the Secretariat of the House of Representatives appropriately and continuously. Yearly budget is allocated for system development and maintenance, human resource development, collection development, academic activities and research including public relations and promotion of service [5.3].

The repository is operated by 2 expert librarians, 7 professional librarians, 1 practitioner librarian and 8 operational staffs [5.4]. The roles and responsibilities assigned are ranging from management and administration of the repository, acquisition and collection development, metadata and cataloging, research support, academic recommendations and advice, and promotion of service [5.5].

For knowledge and skills development, the Secretariat of the House of Representatives has developed an Individual Development Plan (IDP) for each staff [5.6] and motivates the staff to regularly acquire additional knowledge and skills by attending conferences, seminars, discussion forums, workshops, trainings and academic events related to information and library professionals [5.7].

As a member of the Inter-Parliament Union, the International Federation of Library Associations and Institutions (IFLA), the Association of Parliamentary Librarians of Asia and the Pacific (APLAP) [5.8] and the library network of Thai Law Politics, professional librarians have been selected to regularly attend the annual conferences each year [5.9].

--- Evidence Links ---

[5.1] The Secretariat of the House of Representatives: organization structure

<https://dl.parliament.go.th/page/structure>

[https://drive.google.com/file/d/1SuHRD6ryz3A9jhx9-cHGGIK2LX\\_sWncl/view?usp=sharing](https://drive.google.com/file/d/1SuHRD6ryz3A9jhx9-cHGGIK2LX_sWncl/view?usp=sharing)

[5.2] The Information Technology Resources Development Division: roles and responsibilities

The webpage states roles and responsibilities of the Information Technology Resources Development which consists of developing, managing and administering library systems, in-house databases, online databases including library website.

<https://dl.parliament.go.th/page/aboutus#responsibility>

[5.3] The LIRT development plan 2021-2025

[https://drive.google.com/file/d/1MF\\_wH7jf\\_SgcTo9LvEOGGgWzByofd8YB/view?usp=sharing](https://drive.google.com/file/d/1MF_wH7jf_SgcTo9LvEOGGgWzByofd8YB/view?usp=sharing)

[5.4] List of LIRT staff

<https://dl.parliament.go.th/page/group>

[5.5] The Information Technology Resources Development Division: a staff manual

<https://drive.google.com/file/d/1WArZlqKqfMcO2z63xxjvW2mQMx7oytAh/view?usp=sharing>

[5.6] The Information Technology Resources Development Division: Individual Development Plan (IDP)

<https://drive.google.com/file/d/19Q4ktOrWLT6LaW9Mtq-7rLe6QyqGRBps/view?usp=sharing>

[5.7] List of staff training 2018-2020

<https://drive.google.com/file/d/1444GVFLjWk3KECGRMO07cQiOZ4PxywBi/view?usp=sharing>

[5.8] Staff manual: cooperation between Parliamentary libraries

<https://drive.google.com/file/d/1y6QK9uuh5CdqUCn5v1UgUqVChnCviAzC/view?usp=sharing>

[5.9] Example of report on attending an IFLA (International Federation of Library Associations and Institutions) annual conference

<https://dl.parliament.go.th/handle/lirt/562796>

### *Reviewer Entry*

#### **Reviewer 1**

Comments:

#### **Reviewer 2**

Comments:

## **6. Expert guidance**

***R6. The repository adopts mechanism(s) to secure ongoing expert guidance and feedback (either inhouse or external, including scientific guidance, if relevant).***

### ***Compliance Level:***

4 – The guideline has been fully implemented in the repository

#### ***Reviewer Entry***

##### **Reviewer 1**

Comments:

4 – The guideline has been fully implemented in the repository

##### **Reviewer 2**

Comments:

4 – The guideline has been fully implemented in the repository  
accept

### ***Response:***

The repository seeks advice and guidance in many areas as follows:

In system enhancement and development, the repository has officially appointed a procurement committee which includes internal expert users and technical experts, both internal and external, to brainstorm for solutions, collect requirements, give advice on technical and information infrastructure and suggest for appropriate software and techniques in order to come up with a Term of Reference (TOR) for the system development project. The communication channel is formal meetings, both face-to-face and online [6.1].

To enhance the staff's knowledge in managing and operating the repository system, the STAQ Company regularly share experiences, practices and knowledge on new functionalities, upcoming technologies, and useful tools to the repository's staff as a technology transfer program on monthly basis [6.2]. (As stated in R0: Background information section as an outsource partner, the STAQ Technologies Co., Ltd. is responsible for additional development and maintenance of the repository).

For research projects granted by the Secretariat of the House of Representatives, the Research and Development committee, appointed by the Secretariat of the House of Representatives, shall officially appoint the scholars who specialize in the designated topic to give academic advice and recommendations to researchers until the project ends.

For communication between the repository and the designated community, the repository provides several means for users to ask for inquiry, request for assistance, send feedbacks or give comments and suggestions to the repository's staff. Users can find contact information on the repository's main page [6.3] and can communicate with the repository staff

by phone, e-mail or social media such as Facebook (<https://www.facebook.com/LIRT20> and LINE Application “LibraryonLINE” [6.4 1, 2]. After receiving requests and feedbacks, the repository staff will consider and examine each issue and respond to the users case by case [6.5]. All feedbacks from the community will be collected, summarized and analyzed to improve the repository’s services.

--- Evidence Links ---

[6.1] The LIRT repository: list of experts and consultants (internal and external)

<https://dl.parliament.go.th/page/group>

[6.2] Example of report on technology transfer from STAQ Technologies Co., Ltd. to the repository staff

[https://drive.google.com/file/d/1qRYaYlhtPXgsbhn4qzqyJ4fro\\_Oa9UQi/view?usp=sharing](https://drive.google.com/file/d/1qRYaYlhtPXgsbhn4qzqyJ4fro_Oa9UQi/view?usp=sharing)

[6.3] The LIRT repository: contact information

<https://dl.parliament.go.th/page/aboutus#contact>

[6.4] Communication channels between the repository and the designated community

Link:

Facebook: LIRT: Legislative Institutional Repository of Thailand

<https://www.facebook.com/LIRT20/>

LINE application: ‘LibraryonLINE’

<https://library.parliament.go.th/en/services/libraryonline-service>

[6.5] Staff Manual: digital library customer service

<https://drive.google.com/file/d/1is2o-a7X-ilOdqszFduKp6zxRNU4ib68/view?usp=sharing>

### *Reviewer Entry*

#### **Reviewer 1**

Comments:

Accepted

#### **Reviewer 2**

Comments:

## **DIGITAL OBJECT MANAGEMENT**

### **7. Data integrity and authenticity**

## ***R7. The repository guarantees the integrity and authenticity of the data.***

### ***Compliance Level:***

4 – The guideline has been fully implemented in the repository

#### ***Reviewer Entry***

##### **Reviewer 1**

Comments:

4 – The guideline has been fully implemented in the repository

##### **Reviewer 2**

Comments:

4 – The guideline has been fully implemented in the repository  
accept

### ***Response:***

The repository is developed on DSpace platform. The repository is enhanced by integrating a Document Image Processing (DIP) system to facilitate data submission and data/metadata verification process. The DIP system is a web-based application and is used internally by the repository staff as a back-office system.

In data submission process [7.1], the repository staff manually checks all data for duplication before starting the data preparation process, starting from conversion of source (digital content) files into PDF format following the procedures in the staff's manual [7.2] and performing metadata cataloging according to the metadata cataloging manual [7.3]. After the metadata and data files are imported and checked for required metadata, the system automatically creates items, assigns accession date and available date, adds provenance data, and assigns a handle as a unique identifier to each item. MD5 checksums are automatically generated by Checksum checker to verify the integrity of content file(s) [7.4]. Items are further subdivided into named bundles of bitstreams in which all associated files under each item are systematically organized to ensure the data integrity [7.5].

After items are created, a group of librarians starts to perform their duties on reviewing metadata and associated files for quality control. If incorrect or incomplete data were found, the repository staffs will fix the errors according to the errors list [7.6].

The repository has mechanism to track changes of each item's state since a user submitted it including changes occurred on each data file. A checksum checker script is scheduled to perform full fixity check of every data files stored in the repository in order to determine whether or not a file has been changed. All changes and new checksums are also recorded as provenance statements in "dc.description.provenance" metadata which includes the staff's username and action date to ensure the data authenticity [7.7].

The author or creator of publications can request for change in his own contents or digital files by filling in the Change

request form [7.8]. The requested information includes title of publication, handle of items, name of author/creator, description of change, version note (in case of changing the digital files to a new version), and contact information. In case of significant change, the repository staff may ask the requester for a new consent to dissemination memo from the head of his division or unit. Only upon approval by the responsible staff, the repository staff will make changes to the requested item. In case of changing version of the data file, the old version will be replaced by the new one. The repository staff can access the old version of data file and view the history (system log) of each item on the DIP system (Back office system) [7.9].

The repository is regularly maintained by the STAQ Technologies Co., Ltd in a secure environment under the control of the Bureau of Information Technology to prevent technical failure and intrusion which may cause damage to data stored in the repository such as data corruption and data loss. (Please refer to R16 for IT security systems and facilities and R9 for data backup.)

--- Evidence Links ---

[7.1] DSpace: ingest process

<https://wiki.lyrasis.org/display/DSDOC18/Functional+Overview#FunctionalOverview-IngestProcessandWorkflow>

[7.2] Staff Manual: digitization process

<https://drive.google.com/file/d/1DvVMB34SJ9dvQ1hCAwAxHVDwbMmks5z4/view?usp=sharing>

[7.3] Metadata cataloging manual for books

[https://drive.google.com/file/d/1ahvmntAqy1ri\\_6EHyfj0o1iFzilMyhbL/view?usp=sharing](https://drive.google.com/file/d/1ahvmntAqy1ri_6EHyfj0o1iFzilMyhbL/view?usp=sharing)

[7.4] DSpace: checksum checker

<https://wiki.lyrasis.org/display/DSDOC18/Functional+Overview#FunctionalOverview-ChecksumChecker>

[7.5] DSpace: data Model

<https://wiki.lyrasis.org/display/DSDOC18/Functional+Overview#FunctionalOverview-DataModel>

[7.6] The LIRT quality control process: an error list

<https://drive.google.com/file/d/1kLV4QkFHON9lsqNorQb-DdkS9JwbFfYr/view?usp=sharing>

[7.7] Example of data provenance (dc.description.provenance)

<https://drive.google.com/file/d/1wKNL799S5RMFta7epkbUNuyIEFAWtlyU/view?usp=sharing>

[7.8] Change request form

<https://drive.google.com/file/d/1Sq6KbR2siW2zWvHvhpqZTu1wJaQO4IaC/view?usp=sharing>

[7.9] Example of item modification history (Back-office system)

[https://drive.google.com/file/d/1I\\_FuoF5Mw7hBL6ngA5MIdPgg1LnZN-Be/view?usp=sharing](https://drive.google.com/file/d/1I_FuoF5Mw7hBL6ngA5MIdPgg1LnZN-Be/view?usp=sharing)

*Reviewer Entry*

**Reviewer 1**

Comments:

Accepted

**Reviewer 2**

Comments:

accept

## 8. Appraisal

*R8. The repository accepts data and metadata based on defined criteria to ensure relevance and understandability for data users.*

### *Compliance Level:*

4 – The guideline has been fully implemented in the repository

*Reviewer Entry*

**Reviewer 1**

Comments:

4 – The guideline has been fully implemented in the repository

**Reviewer 2**

Comments:

4 – The guideline has been fully implemented in the repository

accept

### *Response:*

The repository provides data deposition service under conditions as stated in R2. The deposited data must be outputs of the members of the parliament, members of the committees, parliamentary officials, or funded/supported by the parliament. The contents must relate to parliamentary affairs and beneficial to legislative process without contradiction to moral and ethical principles, Intellectual Property Law, Copyright Act, and Personal Data Protection policy.

The depositors must submit a data deposition form with metadata and data files, and consent to transfer of management rights which includes data re-formatting and dissemination to the Secretariat of the House of Representatives [8.1].

Prior to the data submission process, the repository staff performs data selection and evaluation as part of the acquisition



process following the Staff's manual [8.2] based on the following criteria:

1. Relevance: The deposited data represents the core mission of legislative process
2. Accuracy: The content of data is accurate, factual and neutral
3. Authority: The authority of the data depositor
4. Currency: The currency of data and data sources
5. Data Source: The primary source is the first priority following by the secondary source and the tertiary source respectively

For metadata cataloging, the repository adopted the Dublin Core metadata schema with qualifiers to develop LIRT Application Profile. The Application profile consists of 59 metadata elements of which 9 elements are mandatory which are

1. Title (dc.title)
2. Author (dc.creator)
3. Issue date (dc.date.issued)
4. Table of contents (dc.description.tableofcontents)
5. Number of pages (dc.fotmat.page)
6. Filename (dc.identifier)
7. Publisher (dc.publisher)
8. Publication place (dc.publisher.place)
9. Type (dc.type) [8.3]. Each element is labeled with understandable title and explanatory texts.

The metadata cataloging is performed by the repository staff following the Metadata cataloging manual [8.4]. Each cataloged item is further reviewed by librarians for metadata completeness and correctness including all associated files under each item [8.5]. If incorrect data were found, the librarian will notify the responsible staff for correctness. If inappropriate data such as personal or sensitive data were found, the repository staff will report the case to a supervisor. Access to the indicated data will be temporarily restricted. A committee might be appointed to consider and render decisions for the existing case. Action(s) will be taken on case by case basis.

For item(s) considered temporary withdrawal, the repository will hide the indicated item from public using the Withdraw function of the repository. The withdrawn items can be browsed, searched, and accessed via the staff interface of the repository but invisible from general public. The temporarily withdrawn items can be reinstated after the problem was solved.

For item(s) considered permanent withdrawal, particularly confidential items which is beyond the scope of the repository, the repository staff will delete the indicated item from the repository. All source files of the deleted item will be stored and regularly backed up on a file server of the Document Image Processing (DIP) system (Back-office system) which is not compliant to OAIS model [8.6] [8.7]. Upon request or approval from the head of division, the authorized staff will be able to re-submit the withdrawn item(s) into DSpace system. The re-submitted item will be treated like a new item. As the source file is already stored on the file server, the re-submission will begin at the beginning of data submission process. The re-submitted item(s) will then be stored and preserved according to DSpace structure which conforms to OAIS model.

--- Evidence Links ---

[8.1] The LIRT repository: data deposition

<https://dl.parliament.go.th/page/repository#repositor>

[8.2] The staff manual: acquisition process

<https://drive.google.com/file/d/1JHYrhwNbB6GxvqvOUeybhaLKCSDex3kN/view?usp=sharing>

[8.3] The LIRT repository: metadata application profile

<https://drive.google.com/file/d/1NzDI0A0ZmtAjKdZ6HHv-nLETqxZq8qxQ/view?usp=sharing>

[8.4] The staff manual: metadata cataloging manual for books

[https://drive.google.com/file/d/1osgfS0-AnlQJQJfv4F7V\\_7p2cZCfayfP/view?usp=sharing](https://drive.google.com/file/d/1osgfS0-AnlQJQJfv4F7V_7p2cZCfayfP/view?usp=sharing)

[8.5] The staff manual: metadata quality control process

<https://drive.google.com/file/d/1GcMZ4ZTPwFwstd0BFLYZ5qzp3fmiEB9i/view?usp=sharing>

[8.6] The staff manual: data weeding/withdrawal process

<https://drive.google.com/file/d/14DphQMTAxwLqJ29kq6XvjxIP3CtkT9EI/view?usp=sharing>

[8.7] The LIRT repository: withdraw and delete function

[https://drive.google.com/file/d/11Q4zaRLq3iCqcjZ52\\_VzqbCXebYIHkh9/view?usp=sharing](https://drive.google.com/file/d/11Q4zaRLq3iCqcjZ52_VzqbCXebYIHkh9/view?usp=sharing)

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:

Accepted

I understand item(s) that are withdrawn permanently are deleted from the repository and stored separately. Are they still being preserved in some way compliant to OAIS?

##### **Reviewer 2**

Comments:

## **9. Documented storage procedures**

*R9. The repository applies documented processes and procedures in managing archival storage of the data.*

### ***Compliance Level:***

4 – The guideline has been fully implemented in the repository

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:

4 – The guideline has been fully implemented in the repository

## **Reviewer 2**

Comments:

4 – The guideline has been fully implemented in the repository

## ***Response:***

The archival storage of the repository is hosted by the Bureau of Information Technology of the Secretariat of the House of Representatives, National Assembly of Thailand under the regular maintenance of the STAQ Technologies Co., Ltd. The storage system is located at the Parliament's data center with secured IT security systems and facilities.

The repository uses the Document Image Processing (DIP) system which is a web-based back-office system to prepare all resource files [9.1] [9.2]. The original files and the complete (modified) files are stored on a SAN (Storage Area Network) storage in different directory. The Submission Information packages (SIP) which contained metadata and content files are created by the Document Image Processing (DIP) system and stored on the SAN storage with direct mount to the DSpace server [9.3].

Upon submission of SIP to DSpace server, the repository transforms the submitted data into Archival Information Package (AIP) according to DSpace structure which conforms to the Open Archival Information System Model (OAIS Model) for inclusion on archival storage. Content of item is divided into bundles; each of bundle contains one or more bitstreams. Archival information are stored on the Oracle database (Oracle RDBMS) and bitstreams are stored on the SAN storage (file server) under the 'assetstore' directory [9.4] [9.5].

As the Archival Information Package (AIP) with identical contents have identical checksums, a checksum checker script is scheduled to perform full fixity check of data files stored in the repository in order to determine whether or not a file has been changed [9.6]. Checksum data is attached to each item and changes are recorded as provenance statements in "dc.description.provenance" metadata in the database server which includes the staff's username and action date. Log files are stored on the DSpace server. (Please refer to R7 for data integrity and authenticity)

Multiple copies of data backup are regularly performed by the STAQ Technologies Co., Ltd. to different locations [9.7] in accordance with the LIRT backup plan [9.8]. Mirror backup is performed to backup of all source codes and data files whereas the fast mirror backup is performed to backup new/modified files into the Backup server [9.9].

The backup data is categorized into 4 groups as follows:

1. Original (Source) files in PDF and XML format are backed up on weekly (fast mirror) and monthly (mirror) basis on the Document Image Processing (DIP) system.
2. System files including database files and encrypted data files are backed up on weekly (fast mirror) and monthly (mirror) basis to 3 locations: 1. Database server 2. File server 3. External server.
3. Document files in XLS, XLXS and CSV format are mirror backed up on monthly basis to 3 locations: 1. Database server 2. File server 3. External server.

4. Document files in PDF format are mirror backed up on monthly basis to 3 locations: 1. Database server 2. File server 3. External server.

Apart from Checksum checker and Server monitoring system, Firewall, Network access control, and Log analyzer are provided by the Bureau of Information Technology to prevent technical failures, intrusions and treats which may cause damage to the repository system and data storage (Please refer to R15 and R16 for IT infrastructures and security systems). Business continuity plan and contingency plan are in place to ensure accessibility and long-term preservation of data (Please refer to R3 for more information).

The repository retains the original data and all derivative versions, and ensures that the data remains unchanged overtime. Mirror backup is used to create an exact copy of the source data. All versions of backup data are preserved overtime and do not allowed for deletion or overwriting. Backup data can be restored within 24 hours according to the maintenance contract. Replacement and repair of hardware and equipment within 24 hours in case of hardware failure is also included in the maintenance contract between the Secretariat of the House of Representatives and the STAQ Technologies Co., Ltd [9.10].

Data stored in the repository can be accessed according to the following policy:

1. Data stored in the item submission process can be accessible by system developers/administrators and authorized staff according to the user's role.
2. Data stored in the archival process (items which contain metadata and content files) can be accessible by the system developers/administrators and general users.
3. Data stored in the backup process can be accessible by system developers/administrators and some authorized staff according to the user's role.

End-users can access the repository via web browser clients using HTTPS (Hypertext Transfer Protocol Secure) protocol with browse and search functionality at <https://dl.parliament.go.th>. Levels of data distribution and item access is allowed according to licenses granted and access rights whereas accessing to data files is controlled by the Digital Rights Management system (DRM).

--- Evidence Links ---

[9.1] The LIRT repository: data submission workflow

<https://drive.google.com/file/d/1KAF-8mDj-vomZTd7FrpxGMoteU0rHO8A/view?usp=sharing>

[9.2] The LIRT repository: data submission data flow

<https://drive.google.com/file/d/18rfAm9S-6lL3lz6K8RK38cZulnOywM9N/view?usp=sharing>

[9.3] The LIRT repository: system structure

<https://drive.google.com/file/d/1cOYsEXJGmoEpmkwp3CsoiKHgTLiJs0fe/view?usp=sharing>

[9.4] The LIRT repository: storage procedures

[https://drive.google.com/file/d/1IbKDMTB1YZWW7DZ7x5\\_\\_SY9kx9k6azz9/view?usp=sharing](https://drive.google.com/file/d/1IbKDMTB1YZWW7DZ7x5__SY9kx9k6azz9/view?usp=sharing)

[9.5] DSpace: storage layer

<https://wiki.lyrasis.org/display/DSDOC18/Storage+Layer>

[9.6] DSpace: validating checksums of bitstreams

<https://wiki.lyrasis.org/display/DSDOC18/Validating+CheckSums+of+Bitstreams>

[9.7] The LIRT repository: backup locations

<https://drive.google.com/file/d/1DLvyVsemqRle2Alm342TO9eegm1kavZ9/view?usp=sharing>

[9.8] The LIRT repository: backup plan

<https://drive.google.com/file/d/1MB-9gMW4rXmrKN1AnXmYJV91DwEM1rmT/view?usp=sharing>

[9.9] The LIRT repository: backup storage

<https://drive.google.com/file/d/1TLZibGgyLVLOApFBcZjcls2nkQ2v8yO6/view?usp=sharing>

[9.10] The LIRT repository: contract of hardware maintenance

[https://drive.google.com/file/d/14cZBAAivJfmHRdyE\\_wb\\_nf4gxQh7f7HI/view?usp=sharing](https://drive.google.com/file/d/14cZBAAivJfmHRdyE_wb_nf4gxQh7f7HI/view?usp=sharing)

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:

Accepted

##### **Reviewer 2**

Comments:

accept

## **10. Preservation plan**

***R10. The repository assumes responsibility for long-term preservation and manages this function in a planned and documented way.***

### ***Compliance Level:***

3 – The repository is in the implementation phase

## *Reviewer Entry*

### **Reviewer 1**

Comments:

3 – The repository is in the implementation phase

### **Reviewer 2**

Comments:

3 – The repository is in the implementation phase

## ***Response:***

As a national repository, the LIRT repository commits to collect, store, and preserve the legislative documents, parliamentary works, and related publications for the purpose of long-term access to support the parliamentary community and general public as stated in the repository's mission "To preserve legislative and parliamentary resources for long-term access service and reference services to the parliamentary community and general public." [10.1].

The preservation plan [10.2] was developed in March 2021 with a revision in November 2021 by the Information Technology Resources Development Division under the Bureau of Academic Services and has been used as a policy framework in managing and administering the LIRT repository.

As stated in the LIRT's preservation plan [10.3], the objectives of preservation are as follows:

1. To develop standard and best practices of preservation conforming to the Open Archival Information System (OAIS) reference model
2. To strengthen knowledge and understanding of the staff who is responsible in managing and administering the repository
3. To develop procedures to promote preservation of current resources and upcoming resources in the future
4. To develop guidelines for selection of software/system to manage digital resources
5. To prepare access and usage rights of digital resources
6. To review and assess the preservation plan including the basic procedures to comply with technological changes, additional resource types, and user requirements
7. To maintain and preserve information resources relating to parliamentary community
8. To improve performance of resource management in order to support the missions of the Secretariat of the House of Representatives

For data deposition, the depositor of the repository is restricted to the parliamentary officials, grantees, and organizations under an agreement or a Memorandum of Understanding (MOU). Contents of the deposited data must relate to parliamentary business and beneficial to legislative process without contrary to moral and ethical principles. The depositors must sign a Data deposition form to transfer rights on the adaptation and distribution of document(s) to the Secretariat of the House of Representatives [10.4].

Conditions of preservation and resource selection priorities are described in the LIRT's preservation plan: criteria and

priority section [10.5] as follows:

1. Legislative resources according to the Parliament's authority: Preserve All for meeting agenda, constitutional draft, interpellations, motions, committee reports and other documents relating to enactment process of the Parliament.
2. Works of the Parliament: Preserve All for works of parliamentary members, works of parliamentary officials, special studies and research reports/publications on legislation and public administration, academic documents, journals, and resources funded by the Parliament.
3. Resources acquired from external sources: Preserve only resources relating to legislation and public administration, and publications which are rare or valuable.

The repository is developed on DSpace software which conforms to the OAIS (Open Archival Information System) model to ensure long-term preservation, data integrity and data authenticity. Qualified Dublin Core (DCMES) is used and extended to describe the legislative resources, and to provide additional options for resource discovery and retrieval. Metadata are created using a provided template in order to control the completeness of metadata elements. The content files are uploaded and preserved as bitstreams with MD5 checksum for integrity checking. Provenance statements are recorded with the staff's username and action date to ensure the data authenticity (Please refer to R7 for data integrity and authenticity).

As stated in the LIRT Preservation plan: data deposition section [10.6], the repository supports text documents in PDF, DOC, DOCX; spreadsheets in XLS, CSV; slide presentations in PPT; and images in TIFF, JPG, and PNG formats. Supported file formats are defined in the format registry to indicate the level of preservation.

For data access and use, most resources can be accessible and usable under a Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 license (CC BY-NC-ND 3.0), except for research reports by institutes & independent scholars under Group 2 (collection no. 2.5.3) which can be readable online but cannot be downloadable. In Group 3, internal publications, general journals and newspapers (collection no. 3.2, 3.3, and 3.4 respectively) can only be previewed for 7 pages. Resources under copyrights are preserved and restricted for internal use by the parliamentary members and committees including parliamentary officials as supporting documents to the mission of the parliament. Rare publications without copyrights are open to general public. The repository declares license information on the item page and in rights statement metadata (dc.rights) of each item.

In case of unprecedented incidents which may affect the continuity of access, the IT Contingency Plan and the Business continuity plan are in place and will be strictly followed (Please refer to R3). In case of technological changes which may cause the current file formats obsolete, the preservation strategy is to review and re-evaluate all resources. All in-use resources will primarily be migrated to open or other appropriate formats. Text documents in DOC and DOCX will be migrated to ODT. The XLS spreadsheets will be migrated to CSV or OpenDocument Spreadsheet (ODS). Protecting content of resources is the first priority. In case of software discontinuity, All archived data will be exported in standard formats such as XML and imported to other standard-based repository systems. The repository also provides AIP backup and restore functionality to accommodate data backup and migration. (Please refer to R14 for information on data import/export)

The repository is aimed to ensure that standard procedures and best practice guidelines are recognized and followed. The administrative staff of the Bureau of Academic services plays an important role in depicting the overall process of preservation and driving all task forces to efficiently and effectively perform the preservation duty in order to meet the repository's missions and goals. Technological partners take part in providing technical guidance to the repository staff and in maintaining system infrastructure and facilities. Each process is documented to illustrate the preservation functions and to depict the working tasks of the repository staff. (Please refer to R12 for workflows)

The Information Technology Resources Development Division has also developed a 5-year preservation plan (2022-2026) of the LIRT repository [10.7] which includes:

1. Conversion of PDF files to PDF/A (Portable Document Format/Archive) format which is an ISO standard-based archival format of PDF to ensure the exact appearance of the contents over time. In addition, the PDF viewing applications which support both PDF and PDF/A will be preserved for future use.
2. Development of a plan to convert PDF files into images and text files such as TIFF, JPG, PNG, and TXT to be preserved as backup files which can be converted to other usable formats.
3. Revision of deposition policy of some collections to enforce submission of original files and other additional formats, e.g., DOC, DOCX, PPT, TXT or image files such as TIFF, JPG, PNG in addition to PDF format. All deposited files with different formats will be preserved as source files which can be reused and reproduced.
4. Improvement of backup process and storage. All backup files must be stored on different geolocations including highly secure cloud storage. Software for retrieving and viewing backup files needs to be acquired.

Currently, the Information Technology Resources Development division is working on the second revision of preservation plan and begins to consult with the STAQ Technologies Co., Ltd. for additional file conversions. A secure cloud storage has been completely configured to automatically receive backup data from the repository as an additional backup location. For standard Persistent Identifiers, the repository has completed the registration process with the CNRI Handle.net and is in process of configuring Handle's prefix on the repository system [10.8].

--- Evidence Links ---

[10.1]The LIRT repository: mission on preservation

[https://dl.parliament.go.th/page/aboutus#digital\\_resource](https://dl.parliament.go.th/page/aboutus#digital_resource)

[10.2]The LIRT repository's preservation plan

Contents of the preservation plan are summarized in Statements (Response).

<https://drive.google.com/file/d/15gBx0LbeFO8wKbhJTLxfyDuOPk82Mul2/view?usp=sharing>

[10.3] The LIRT repository's preservation plan: objectives

[https://drive.google.com/file/d/1HkWoRyh6LXQecXp381v5-hC\\_T\\_EttVLV/view?usp=sharing](https://drive.google.com/file/d/1HkWoRyh6LXQecXp381v5-hC_T_EttVLV/view?usp=sharing)



[10.4] The LIRT repository: data deposition: conditions of deposition

<https://dl.parliament.go.th/page/repository#repository>

[10.5] The LIRT repository's preservation plan: priority of preservation

Contents of this issue are summarized in Statements (Response).

<https://drive.google.com/file/d/1QqKiNqQq8wKrNZ8nINhhk0MvJkwE9y6a/view?usp=sharing>

[10.6] The LIRT repository's preservation plan: supported file formats

Contents of this issue are summarized in Statements (Response).

<https://drive.google.com/file/d/1B3Of4t6tONQIBHafsn3v3CnYqUfivwMw/view?usp=sharing>

[10.7] The LIRT repository's preservation plan: the 5-year preservation plan (2022-2026)

Contents of this issue are summarized in Statements (Response).

[https://drive.google.com/file/d/1zw2uOVXwfc6R6TX6pj7W1GnipYPw\\_zjS/view?usp=sharing](https://drive.google.com/file/d/1zw2uOVXwfc6R6TX6pj7W1GnipYPw_zjS/view?usp=sharing)

[10.8] The LIRT repository: registration of CNRI Handle.Net

[https://drive.google.com/file/d/1i\\_wr8tCnLablhgD7dJOi81A7NSoEpeMj/view?usp=sharing](https://drive.google.com/file/d/1i_wr8tCnLablhgD7dJOi81A7NSoEpeMj/view?usp=sharing)

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:

As all evidence documents aren't translated into english language, can you please briefly describe your future preservation planning strategy for your holdings, e.g. format migration, considering significant properties?

##### **Reviewer 2**

Comments:

accept

## **11. Data quality**

***R11. The repository has appropriate expertise to address technical data and metadata quality and ensures that sufficient information is available for end users to make quality-related evaluations.***

### ***Compliance Level:***

4 – The guideline has been fully implemented in the repository

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:

4 – The guideline has been fully implemented in the repository

## **Reviewer 2**

Comments:

4 – The guideline has been fully implemented in the repository  
accept

## ***Response:***

As stated in R8: Appraisal, the metadata cataloging is preliminary performed by the repository staff following the Metadata cataloging manual based on Dublin Core specifications and AACR2 [11.1]. The repository uses the metadata element “dc.relation” to provide link to related item(s) [11.2].

To control the quality of data and metadata, a group of professional librarians is assigned (4 professional librarians) to review metadata and data files for completeness and correctness [11.3]. If incorrect or incomplete data were found, all errors will be listed by librarians and the repository staff will be informed to correct the errors.

To review data and metadata, the professional librarians conform to the following manuals and guidelines:

1. The LIRT Metadata Application Profile [11.4]
2. The Metadata cataloging manual based on Dublin Core specifications
3. The staff’s manual [11.5] which consists of 1. Creation of metadata template [11.6] 2. File format conversion [11.7] 3. File naming convention [11.8] 4. Bookmarking [11.9] 5. Metadata and display checking [11.10]

The designated community is able to comment or report incorrect and inappropriate data to the repository’s staff by phone, e-mail or Live Chat as stated on the repository’s contact information section [11.11]. The repository staff will consider and examine each issue and respond to the users case by case.

--- Evidence Links ---

[11.1] Metadata cataloging manual

<https://drive.google.com/file/d/1xK7fzaeasTFwMtYysyHLO4wAq4k6q1rf/view?usp=sharing>

[11.2] Example of linkage to related item(s)

<https://drive.google.com/file/d/1AkwLpkmi0hMqkUm5T6sLT9o4HI5jLsaf/view?usp=sharing>

[11.3] The LIRT repository: list of librarians performing data quality control

<https://dl.parliament.go.th/page/group>

[11.4] The LIRT repository: metadata application profile

<https://drive.google.com/file/d/1ks-1Q5fXbBVHaXH1fLui4yD9HYS-BkNZ/view?usp=sharing>

[11.5]The Staff manual

[https://drive.google.com/file/d/1nupz\\_CjnVNAu5n\\_kAo7HSc69iyeDOwT/view?usp=sharing](https://drive.google.com/file/d/1nupz_CjnVNAu5n_kAo7HSc69iyeDOwT/view?usp=sharing)

[11.6] The Staff manual: creating a metadata template

<https://drive.google.com/file/d/1NPgxMARrUME8nW3N3bjlZvVT00yNn23b/view?usp=sharing>

[11.7]The Staff manual: converting files

[https://drive.google.com/file/d/1I-WwVVnRWr\\_hRGb\\_OQG3Ejl1VjKXPJpu/view?usp=sharing](https://drive.google.com/file/d/1I-WwVVnRWr_hRGb_OQG3Ejl1VjKXPJpu/view?usp=sharing)

[11.8] The Staff manual: renaming files

<https://drive.google.com/file/d/1szOLo5OM4RjTKu5GejreLHXjay0wxEdr/view?usp=sharing>

[11.9] The Staff manual: bookmarking

[https://drive.google.com/file/d/18W81jwsGM54O2b\\_v2j6U8a7ldosYszob/view?usp=sharing](https://drive.google.com/file/d/18W81jwsGM54O2b_v2j6U8a7ldosYszob/view?usp=sharing)

[11.10] The Staff manual: reviewing data for quality control

<https://drive.google.com/file/d/1fzw1UfoYYIt5RqqiWppg5PR1SPADaVOw/view?usp=sharing>

[11.11] The LIRT repository: contact information

<https://dl.parliament.go.th/page/aboutus#contact>

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:

Accepted

##### **Reviewer 2**

Comments:

## **12. Workflows**

***R12. Archiving takes place according to defined workflows from ingest to dissemination.***

### ***Compliance Level:***

3 – The repository is in the implementation phase

#### *Reviewer Entry*

## **Reviewer 1**

Comments:

3 – The repository is in the implementation phase

## **Reviewer 2**

Comments:

3 – The repository is in the implementation phase  
accept

## ***Response:***

The repository has developed workflow diagrams and data flow diagrams [12.1] to illustrate preservation processes and functions which are aligned to the Open Archival Information System (OAIS) reference model [12.2]. The workflows developed are used as operational guidelines and are documented in the staff's manual to meet the long-term preservation and access standard which will lead to efficiency and trustworthiness of the repository.

The repository's workflows represent processes and functions of the repository from ingestion to dissemination covering data deposition, data acquisition, data cataloging, data submission/import, data storage/archival, data review/checking, data withdrawal, and data dissemination and service as follows:

- Data deposition workflow [12.3]
- Data appraisal and acquisition workflow [12.4]
- Data files preparation workflow [12.5]
- Metadata structure creation workflow [12.6]
- Data Submission workflow [12.7]
- Data Submission: Single item workflow [12.8]
- Data Submission: Batch import workflow [12.9]
- Data storage workflow [12.10]
- Metadata and data review/checking workflow [12.11]
- Data withdrawal/weeding workflow [12.12]
- Customer feedback workflow [12.13]

The LIRT repository is developed on DSpace platform of which the ingest functionality is aligned to the OAIS reference model. The system receives a Submission Information Package (SIP) and transforms the package into Archival Information Package (AIP) for archival storage [12.14]. To support data reuse, the Archival Information Package (AIP) can be backed up and restored across DSpace repositories. The Dissemination Information Package (DIP) can be disseminated in form of community, collection, item record, bitstreams and metadata file in XML format. Item display page is the default Dissemination Information Package (DIP) of each item in the repository.

--- Evidence Links ---

[12.1] The LIRT repository: workflow

<https://drive.google.com/file/d/1cCfYgjM1XJsMNs1Fwz6EgPqyd5RyzUqW/view?usp=sharing>

[12.2] OAIS (Open Archival Information System) reference model

<https://drive.google.com/file/d/1VfAjeUQ7n8CjKWQJUSQIIhVVuPpbxwF-/view?usp=sharing>

[12.3] The LIRT repository: data deposition workflow

<https://drive.google.com/file/d/1siKkgH08FNKjETa9pxNoANjolGd0vGhl/view?usp=sharing>

[12.4] The LIRT repository: data appraisal and acquisition workflow

<https://drive.google.com/file/d/1fmnKyFHHqx25jXNC3HVmi2abz7-rX2m0/view?usp=sharing>

[12.5] The LIRT repository: data files preparation workflow

[https://drive.google.com/file/d/1L42\\_7pvLDuBzfUwhaM-glf44kJKEbMwl/view?usp=sharing](https://drive.google.com/file/d/1L42_7pvLDuBzfUwhaM-glf44kJKEbMwl/view?usp=sharing)

[12.6] The LIRT repository: metadata structure creation workflow

<https://drive.google.com/file/d/1CI-3aK4ck1NHu7KDjLxn-CMbGm3Vfcl4/view?usp=sharing>

[12.7] The LIRT repository: data submission workflow

[https://drive.google.com/file/d/11jdkNZu5N7F5ug4g\\_ogSR\\_LeOCT9jatq/view?usp=sharing](https://drive.google.com/file/d/11jdkNZu5N7F5ug4g_ogSR_LeOCT9jatq/view?usp=sharing)

[12.8] The LIRT repository: data submission: single item workflow

<https://drive.google.com/file/d/1096X44H-anncuanhPIVCu0vIb045xWz3/view?usp=sharing>

[12.9] The LIRT repository: data submission: multiple items workflow

<https://drive.google.com/file/d/1B11UEdYRSk-UWI41bQfyqlw6lsWyWBfB/view?usp=sharing>

[12.10] The LIRT repository: data storage workflow

[https://drive.google.com/file/d/1ySjzjN7gK1\\_aOmNUF5OXYXK1y0YjQLWM/view?usp=sharing](https://drive.google.com/file/d/1ySjzjN7gK1_aOmNUF5OXYXK1y0YjQLWM/view?usp=sharing)

[12.11] The LIRT repository: data and metadata review workflow

<https://drive.google.com/file/d/1IW9VL362hq2mzPe5OIXtjlgXddPA62YA/view?usp=sharing>

[12.12] The LIRT repository: data withdrawal/weeding workflow

[https://drive.google.com/file/d/155WbnEJNZWGbZNNHp6Mml\\_qTzjWopgZq/view?usp=sharing](https://drive.google.com/file/d/155WbnEJNZWGbZNNHp6Mml_qTzjWopgZq/view?usp=sharing)

[12.13] The LIRT repository: customer feedback workflow

<https://drive.google.com/file/d/1Qff-OkV2Ap8gJ5-1wnS1S4vI2DD7Lw3C/view?usp=sharing>

[12.14] DSpace: Ingest Process

*Reviewer Entry*

**Reviewer 1**

Comments:

Accepted

The workflow diagrams are a great help to understand your processes, though some of them seem to mix thai and english language (e.g. 12.7, 12.8 and 12.9). Is this intended?

Is there also a workflow diagram for your preservation planning?

**Reviewer 2**

Comments:

## 13. Data discovery and identification

*R13. The repository enables users to discover the data and refer to them in a persistent way through proper citation.*

### *Compliance Level:*

3 – The repository is in the implementation phase

*Reviewer Entry*

**Reviewer 1**

Comments:

3 – The repository is in the implementation phase

**Reviewer 2**

Comments:

3 – The repository is in the implementation phase  
accept

### *Response:*

The repository [<https://dl.parliament.go.th>] can be discovered through general search engines such as Google, Yahoo and Bing and can be findable on the National Assembly Library of Thailand website (<https://library.parliament.go.th/en>) and the Thai Law Politics: Library network website (<http://www.thailawpolitics.info/parliament-lib/>). Mobile application [Android | iOS] and Line application (Line Chatbot) are also provided to increase data accessibility.

As a national repository, the repository has not been indexed in other databases.

The repository adopted the Dublin Core Metadata Element Set (DCMES) to describe data [13.1]. Dublin Core is a standard metadata schema which is widely used and is advantageous for cross-domain information resource description. Dublin Core is originally developed to facilitate discovery of information objects.

The repository adopted and applied the Qualified Dublin Core (QDC) in DSpace metadata registry to describe legislative resources and supporting documents. Fifty-nine metadata elements are selected, all of which nine elements are required fields. Some elements are additionally applied to store local specific information and used as browsing options, e.g., 'dc.parliament' for parliament type, 'dc.parliament.session' for meeting session, 'dc.parliament.sittingNo' for parliamentary sitting, etc. Table of contents is automatically added to 'dc.description.tableofcontents' by retrieving bookmark information from PDF file. Information about rights and access rights is stated explicitly in Rights statements under 'dc.rights' and 'dc.access.rights' respectively in order to provide usage information. Each element contains sufficient information and is labeled with titles and explanatory texts which can be understandable by the designated community [13.2].

The repository, which is developed on DSpace platform, provides Browse and Search functionality (Both simple search and advanced search). Search box is available at the top of every page (<https://dl.parliament.go.th/community-list>) [13.3]. DSpace used Solr search engine [13.4] to index data for searching and browsing documents. Metadata, Boolean and full-text searching including other query types such as phrase queries, wildcard queries, and proximity queries can be performed.

Item record can be cited with item's handle in the form of URI (Uniform Resource Identifier) which is a unique local ID of each item, e.g., <https://dl.parliament.go.th/handle/lirt/576395> [13.5]. Handle is also assigned to community and collection level which means the users can also cite item's community or item's collection. Related resources are identified in 'dc.relation' element to provide linkage between items.

The repository supports the OAI-PMH Protocol (The Open Archives Initiative Protocol for Metadata Harvesting) for metadata harvesting to facilitate content dissemination and repository interoperability [13.6]. Data can be retrieved via OAI-PMH or API (Application Programming Interface) [13.7]. The repository also provides RSS feed buttons on community's and collection's main page which can be used to promote new item submissions on the Library website (<https://library.parliament.go.th/en>) [13.8].

The repository already registered with CNRI Handle.net to acquire the Persistent Identifiers (PIDs) and is in process of acquiring Digital Object Identifiers (DOIs) from the National Research Council of Thailand (NRCT) which is a DOI Registration Agencies (RA) of DataCite in Thailand [13.9].

--- Evidence Links ---

[13.1]The LIRT repository: metadata application profile

<https://drive.google.com/file/d/1kfOZW4jcLAQW4OqvxA9hcUgnrRWzbP1/view?usp=sharing>

[13.2] Example of item described by Qualified Dublin Core (QDC)

<https://dl.parliament.go.th/handle/lirt/570158?show=full>

[13.3] The LIRT repository: search and browse functionality

[https://drive.google.com/file/d/1CVATw3\\_2NjktKoEBruCgsLdFLL\\_dD3vs/view?usp=sharing](https://drive.google.com/file/d/1CVATw3_2NjktKoEBruCgsLdFLL_dD3vs/view?usp=sharing)

[13.4] DSpace: Lucene search engine

<https://lucene.apache.org/core/>

[13.5] DSpace: handles

<https://wiki.lyrasis.org/display/DSDOC18/Functional+Overview#FunctionalOverview-Handles>

[13.6] DSpace: OAI support

<https://wiki.lyrasis.org/display/DSDOC18/Functional+Overview#FunctionalOverview-OAISupport>

[13.7] Metadata retrieval via OAI-PMH and API

[https://drive.google.com/file/d/19\\_V4q9nAdCM16B24G87-52Y80Yr67Xgz/view?usp=sharing](https://drive.google.com/file/d/19_V4q9nAdCM16B24G87-52Y80Yr67Xgz/view?usp=sharing)

[13.8] RSS Feed from DSpace

<https://library.parliament.go.th/th/aggregator/sources/2>

[13.9] Letter to the National Research Council of Thailand (NRCT) requesting for DOI

<https://drive.google.com/file/d/1KTfxCu5FRetqh5mQ7CSQAKiZMNRfPoQp/view?usp=sharing>

### *Reviewer Entry*

#### **Reviewer 1**

Comments:

Accepted

You could think of upping the compliance level from 3 to 4. DOI registration still being planned isn't a show stopper as there are already handles created by Dspace in place and search facilities, standardized metadata, OAI-PMH interface and recommended citation are already implemented.

#### **Reviewer 2**

Comments:

Persistent identifiers via Handles or DOIs are a critical part of this requirement. It is good to see they are in the planning

## **14. Data reuse**

***R14. The repository enables reuse of the data over time, ensuring that appropriate metadata are available to support the understanding and use***



*of the data.*

## ***Compliance Level:***

4 – The guideline has been fully implemented in the repository

### ***Reviewer Entry***

#### **Reviewer 1**

Comments:

4 – The guideline has been fully implemented in the repository

#### **Reviewer 2**

Comments:

4 – The guideline has been fully implemented in the repository  
accept

## ***Response:***

The repository adopted the Qualified Dublin Core (QDC) metadata to describe resources. A group of metadata elements is properly selected to describe each type of resources [14.1]. As stated in R13: Some metadata elements are additionally applied to store specific information e.g., 'dc.parliament' for parliament type, 'dc.parliament.session' for meeting session and 'dc.parliament.sittingNo' for Parliamentary sitting, etc.

For example, for parliamentary interpellation documents, additional information are added such as Type of parliament (dc.parliament), Meeting date (dc.date.agenda) Session (dc.parliament.session), Parliamentary sitting (dc.parliament.sittingNo), Questioner (dc.contributor.question), Answerer (dc.contributor.answer-position) [14.2]. Access rights (dc.access.rights) and Rights (dc.rights) are also provided. Each element is labeled with understandable explanatory texts, this is to ensure that parliamentary members and officials can search and select appropriate data using information provided by the repository. The repository allows addition of metadata schema and metadata elements if needed.

The repository serves the designated community as a main source of primary legislative data. As all resources are used in legislative process to fulfill the duties of enactment and passing of laws, control of the administration of State affairs, and giving approval for important affairs of the country, preservation for data integrity, accuracy, availability, accessibility and identification are concerned. Currently, most of data are preserved in PDF (Portable Document Format) format which is a widely used format and can be opened with PDF reader software or general web browsers such as Chrome, Firefox and Microsoft Edge [14.3].

Most of item records in the repository, except some collections under copyright, are licensed under Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 License. This license allows users to copy and distribute the material in any medium or format in unadapted form only, for noncommercial purposes only, and only so long as attribution is given to the creator. The repository declares this license on the item page and in rights statement metadata (dc.rights) of each item

[14.4].

The Information Technology Resources Development Division is closely and continuously investigating digital continuity and technological changes as file format can become obsolete. The current file formats including XLS, XLSX as mentioned in R9 are being assessed and planned for data migration and file format conversion to ensure long-term availability and accessibility over time.

In case of unexpected incidents or technological changes which may cause data to be transferred to other repository system, the repository provides AIP backup and restore functionality to accommodate data backup and data migration. The repository staff can export all metadata in CSV format (which is an open format) by themselves or export the entire hierarchy [14.5] which includes data files, metadata and relationships between communities/collections/items [14.6] into a METS-based AIP format. The entire hierarchy can be re-imported into another DSpace instance in the same format [14.7].

--- Evidence Links ---

[14.1] The LIRT repository: metadata application profile

[https://drive.google.com/file/d/14Ur78BL3942a\\_p2coH5ITRnbmVo\\_ga9w/view?usp=sharing](https://drive.google.com/file/d/14Ur78BL3942a_p2coH5ITRnbmVo_ga9w/view?usp=sharing)

[14.2] Example of metadata elements for interpellation documents

[https://drive.google.com/file/d/1zDh\\_kGPXmISqv7LX4z\\_2CTXLmVdLXgf5/view?usp=sharing](https://drive.google.com/file/d/1zDh_kGPXmISqv7LX4z_2CTXLmVdLXgf5/view?usp=sharing)

[14.3] The LIRT preservation plan: file formats

<https://drive.google.com/file/d/1xgih8ux6n-rqQiClw1J6wR5OynKQwaxa/view?usp=sharing>

[14.4] The LIRT repository: example of Creative Commons (CC) icons displayed on item page

[https://drive.google.com/file/d/15hH\\_Qv\\_-ECFDQ\\_yFSB6Jur3\\_7ORBviL0/view?usp=sharing](https://drive.google.com/file/d/15hH_Qv_-ECFDQ_yFSB6Jur3_7ORBviL0/view?usp=sharing)

[14.5] DSpace: data model diagram

<https://wiki.lyrasis.org/display/DSDOC18/Functional+Overview#FunctionalOverview-DataModel>

[14.6] The LIRT repository: item's file structure

<https://drive.google.com/file/d/1WTzMtL-oe-zClcKETGkiIPv-W9Jx6o52/view?usp=sharing>

[14.7] DSpace: AIP backup and restore

<https://wiki.lyrasis.org/display/DSDOC18/AIP+Backup+and+Restore>

*Reviewer Entry*

**Reviewer 1**

Comments:

Accepted

**Reviewer 2**

Comments:

## TECHNOLOGY

### 15. Technical infrastructure

*R15. The repository functions on well-supported operating systems and other core infrastructural software and is using hardware and software technologies appropriate to the services it provides to its Designated Community.*

#### **Compliance Level:**

4 – The guideline has been fully implemented in the repository

#### *Reviewer Entry*

**Reviewer 1**

Comments:

4 – The guideline has been fully implemented in the repository

**Reviewer 2**

Comments:

4 – The guideline has been fully implemented in the repository  
accept

#### **Response:**

The Thai Parliament has fully developed Information and Communication Technology (ICT) infrastructure in accordance with the Digital Parliament Development Plan's strategies which include development of ICT infrastructure and ICT security. The development is aimed to conform to international standards and to support the parliamentary services thoroughly and equally. The new ICT infrastructure must be able to support the works of the Secretariat of the House of Representatives and the Secretariat of the Senate including the LIRT repository which is operated by the Information Technology Resources Development Division under the Bureau of Academic Services of the Secretariat of the House of Representatives.

The LIRT repository is developed on DSpace, open-source digital repository software which is widely used by academic institutions, research centers and libraries. DSpace is renowned for its standard-based functionalities in preserving and

distributing the digital resources [15.1] [15.2], OAIS-compliant [15.3] and easy-to-use web interface.

The repository is operated on a computer network which comprises a set of servers as follows [15.4]:

1. LIRT Search server: use to store, index, render search interface with dynamic navigation
2. Application server: DSpace software installed: use to collect, store, preserve, disseminate data (OS: Windows, CPU: 6 cores, RAM: 32 GB)
3. Database server: Oracle RDBMS installed (main database): use to store policies, users data and associated documents
4. File storage: SAN (Storage Area Network): use to store all data files including source (original) files, watermarked files and encrypted files by DRM
5. DRM server: Digital Rights Management (DRM) software installed: use to encrypt, manage and control usage restriction of digital files in some collections
6. LIRT (DRM) database: use to store circulation data, document usage policy and user permissions
7. LDAP Directory server: use to store users and user groups, and to provide authentication service to other systems
8. Mobile App Web service: mobile applications installed: use to provide access service for mobile devices using Android and iOS.

The repository servers and computers run on an efficient computer network with sufficient and reliable internet connection to support the designated community. All machines are securely stored in a server room with a security control system under management and control of the Bureau of Information Technology of the Secretariat of the House of Representatives. The Bureau of Information Technology takes role in the maintenance of hardware and computer network whereas the STAQ Technologies Co., Ltd. (an outsource partner) is responsible for maintenance of applications software [15.5]. The Information Technology Resources Development Division has developed a current software list and user manuals of the repository which consists of administrator's manual [15.6], staff's manual [15.7] and user's manual [15.8].

The repository has planned to move all servers to the Parliament's data center according to the Digital Parliament Development Plan (2018-2022) [15.9] and the Digital Parliament driving plan of the Secretariat of the House of Representatives (2018-2022) [15.10].

--- Evidence Links ---

[15.1] DSpace: technical specifications

<https://duraspace.org/dspace/resources/technical-specifications/>

[15.2] DSpace: diagram

[https://duraspace.org/wp-content/uploads/dspace-files/DSpace\\_Diagram.pdf](https://duraspace.org/wp-content/uploads/dspace-files/DSpace_Diagram.pdf)

[15.3] OAIS reference model (ISO 14721)

<http://www.oais.info>

[15.4] The LIRT repository: system structure

[https://drive.google.com/file/d/1GxTJdrHKSoP-\\_E\\_Uac49g1o5XS0J2LLx/view?usp=sharing](https://drive.google.com/file/d/1GxTJdrHKSoP-_E_Uac49g1o5XS0J2LLx/view?usp=sharing)

[15.5] STAQ Technologies Co., Ltd: company profile

[https://drive.google.com/file/d/1SV0ChRXctZi-tgD\\_9-pSlxfR9x9vNmSK/view?usp=sharing](https://drive.google.com/file/d/1SV0ChRXctZi-tgD_9-pSlxfR9x9vNmSK/view?usp=sharing)

[15.6] The LIRT repository: administrator's manual

[https://drive.google.com/file/d/1Gcrg5Xj6gptOM6YJDA1BrP\\_9YqX7XDre/view?usp=sharing](https://drive.google.com/file/d/1Gcrg5Xj6gptOM6YJDA1BrP_9YqX7XDre/view?usp=sharing)

[15.7] The LIRT repository: staff's manual

[https://drive.google.com/file/d/11PQp3bB8nNAZo32\\_77wFbaZfQQ5z6C9h/view?usp=sharing](https://drive.google.com/file/d/11PQp3bB8nNAZo32_77wFbaZfQQ5z6C9h/view?usp=sharing)

[15.8] The LIRT repository: user's manual

[https://drive.google.com/file/d/19KJ1UREoAbVOmLvMc4hx1Z\\_c58nlomCH/view?usp=sharing](https://drive.google.com/file/d/19KJ1UREoAbVOmLvMc4hx1Z_c58nlomCH/view?usp=sharing)

[15.9] The Digital Parliament Development Plan (2018-2022) of the National Assembly of Thailand

<https://dl.parliament.go.th/handle/lirt/570590>

[15.10] The Digital Parliament Development Plan (2018-2022): a driving plan of the Secretariat of the House of Representatives

<https://dl.parliament.go.th/handle/lirt/534494>

### *Reviewer Entry*

#### **Reviewer 1**

Comments:

Accepted

#### **Reviewer 2**

Comments:

## **16. Security**

***R16. The technical infrastructure of the repository provides for protection of the facility and its data, products, services, and users.***

### ***Compliance Level:***

4 – The guideline has been fully implemented in the repository

### *Reviewer Entry*

#### **Reviewer 1**

Comments:

4 – The guideline has been fully implemented in the repository

#### **Reviewer 2**

Comments:

4 – The guideline has been fully implemented in the repository  
accept

### ***Response:***

The Bureau of Information Technology under the Secretariat of the House of Representatives maintains the repository's hardware and network in accordance to the parliament's information security policy [16.1] and guideline [16.2] which is based on ISO/IEC 27001: Information Security Management. The information security guideline contains information about Information security, organization of information security, Human resource security, Asset management, Access control, Cryptography, Physical and environmental security, operations security, communications security, systems acquisition development and maintenance, supplier relationships, information security incident management, Information security aspects of business continuity management and compliance.

The policy and guideline are developed under the Parliament's Information and Communication Technologies (ICT) Security Plan (2019-2022) [16.3] with the aims to improve the efficiency of system administration procedures to meet international standards and cyber security CIA Triad: Confidentiality, Integrity and Availability.

Please refer to R3 for IT Contingency Plan, Continuity Plan, Succession Plan and Compliance audit.

The Bureau of Information Technology has implemented IT security systems and facilities to prevent technical failures, intrusions and treats which may cause damage to the information systems and data stored which includes Proxy server, Antivirus server, Network VirusWall, DDOS protection system, Network access control, Firewall with Firewall log analyzer, Server monitoring system, Log analyzer, Fingerprint scanning system. Most systems are located at CAT-IDC (Internet Data Center) by CAT Telecom Public Company Ltd. (At present, the CAT Telecom Public Company Limited is merged with the TOT Public Company Limited to the National Telecom Public Company Limited.) [16.4].

The repository uses DSpace authentication system to manage and identify users and user groups [16.5] and uses LDAP (Lightweight Directory Access Protocol) authentication system to validate the repository's staff and other authorized users. Authorizations in the repository can be done in every levels of contents' hierarchy (Communities, Collections and Items) by assigning resource policies (Permission of actions) to specific groups of users [16.6]. In some collections, usage restrictions to data files (Content files) is managed and controlled by the Digital Rights Management (DRM) system.

The repository has a checksum checker [16.7] to verify the integrity of data file(s). The repository also has a mechanism to track changes of each item's state and to record actions as provenance statements in "dc.description.provenance"

metadata. (Please refer to R7 for more details about data integrity and authenticity.)

Data backup is regularly performed by the STAQ Technologies Co., Ltd to different locations [16.8] [16.9] [16.10]. (Please refer to R9 for data backup.)

The repository system is stored in a server room with a back-up power system, a fire alarm system and a fire suppression system. The back-up power system is maintained two times a year. The disaster preparedness is practiced two times a year. In case of emergency or disaster, the Bureau of Information Technology will operate under the Parliament's IT Contingency Plan [16.11] which applies the recommendations of the Contingency Planning Guide for Federal Information Systems of NIST 800-34 and ISO 22301-2012 as an operational framework.

For risk management, the Bureau of Information Technology operates under the Parliament's Information Risk Management Plan 2020 [16.12] which applied the COSO (The Committee of Sponsoring Organizations of the Treadway Commission) ERM (Enterprise Risk Management) framework and guidance on enterprise risk management to improve governance and operational performance. The five principles of COSO ERM consist of 1. Governance and Culture 2. Strategy and Objective-Setting 3. Performance 4. Review and Revision and 5. Information, Communication, and Reporting.

For Human resource security, the Bureau of Information Technology has a hiring process and guideline of selecting and hiring staff/employees who has duties and responsibilities in information systems which includes issues on screening, terms and conditions of employment, management responsibilities, information security awareness education and training, disciplinary process, and termination and change of employment [16.13]. At present, the Information Technology Resources Development Division assigns two information staff to work closely with the IT staff from the Bureau of Information Technology to manage and administer the IT security of the repository.

--- Evidence Links ---

[16.1]The Parliament's IT security policy

<https://drive.google.com/file/d/1GfG2ZF72TnSP5Dc7qJ2b4k4Mg821mKRW/view?usp=sharing>

[16.2] The Parliament's IT security guidelines

<https://drive.google.com/file/d/1vTvPhIjkQn3y140xVMVdfU3PQoJADP1S/view?usp=sharing>

[16.3] The Parliament's IT security plan 2019-2022

<https://drive.google.com/file/d/1p5JBifK7KKaH-9y1YssF6Bxkp9IO4Qsw/view?usp=sharing>

[16.4] The office of Information Technology: security system's hardware and software

[https://drive.google.com/file/d/1KBU\\_7ba9QvldS4-ZmDRkayjYScsldS4m/view?usp=sharing](https://drive.google.com/file/d/1KBU_7ba9QvldS4-ZmDRkayjYScsldS4m/view?usp=sharing)

[16.5] DSpace: authentication

<https://wiki.lyrasis.org/display/DSDOC18/Functional+Overview#FunctionalOverview-AuthenticationAuthentication>

[16.6] DSpace: authorization

<https://wiki.lyrasis.org/display/DSDOC18/Functional+Overview#FunctionalOverview-Authorization>

[16.7] DSpace: checksum checker

<https://wiki.lyrasis.org/display/DSDOC18/Functional+Overview#FunctionalOverview-ChecksumChecker>

[16.8] The LIRT repository: backup procedures

[https://drive.google.com/file/d/1mTnv711Kz2\\_znevPTGugP7c-k-zqiR2K/view?usp=sharing](https://drive.google.com/file/d/1mTnv711Kz2_znevPTGugP7c-k-zqiR2K/view?usp=sharing)

[16.9]The LIRT repository: backup locations

[https://drive.google.com/file/d/1KfqOGIm\\_O-FWvK5mG3Y2SwvtDQbL3BOn/view?usp=sharing](https://drive.google.com/file/d/1KfqOGIm_O-FWvK5mG3Y2SwvtDQbL3BOn/view?usp=sharing)

[16.10] Example of system maintenance report: system backup

<https://drive.google.com/file/d/1pfY9rTZ00Kb8btWv5HhwFKiQyJdksFth/view?usp=sharing>

[16.11] The Parliament's IT contingency plan

[https://drive.google.com/file/d/1QjFnRxx\\_0dT5zqlvwCJyROhi6YZsKajT/view?usp=sharing](https://drive.google.com/file/d/1QjFnRxx_0dT5zqlvwCJyROhi6YZsKajT/view?usp=sharing)

[16.12] The Parliament's information risk management plan 2020

<https://drive.google.com/file/d/1hEcwDKRsfJhJ8SZQnxM04j5NA5159W-p/view?usp=sharing>

[16.13] The Parliament's IT security guidelines: human resource security

<https://drive.google.com/file/d/18HfxA99Ar4sEC7KULb9K393WwCfnX4Wd/view?usp=sharing>

#### *Reviewer Entry*

##### **Reviewer 1**

Comments:

Accepted

##### **Reviewer 2**

Comments:

## **APPLICANT FEEDBACK**

### **Comments/feedback**



*These Requirements are not seen as final, and we value your input to improve the CoreTrustSeal certification procedure. Any comments on the quality of the Requirements, their relevance to your organization, or any other contribution, will be considered as part of future iterations.*

***Response:***

***Reviewer Entry***

**Reviewer 1**

Comments:

A very solid application, especially the documentation for infrastructure and deposit processes is very convincing. Workflow diagrams were a great help to understand the processes. Have you considered to fully translate them into english and set them up on a more prominent place for the interested community?

Recommendation

Please consider to describe your preservation planning in more detail for your next application.

**Reviewer 2**

Comments:

Approved