

STATEMENT OF WORK

Provision of Drupal Web Content Management Services for the IAEA

1. Scope

- a) This Statement of Work (SOW) describes the requirements for the provision of a platform for the International Atomic Energy Agency (IAEA or the Agency) to develop, test, publish, maintain, operate and administer its public website www.iaea.org, using Drupal open-source content management system (hereinafter referred to as “the Services”).
- b) Drupal 7 platform has been the IAEA’s standard Web Content Management System since 2014 and currently accommodates over 67,000 Pages (Nodes) in six (6) official languages, and more than 96,000 images and documents.
- c) Drupal 9 platform is currently experimental and is used alongside Drupal 7 as an image bank; the Drupal 7 site will gradually be migrated to Drupal 9. When the migration process is completed, the Drupal 7 platform will be completely decommissioned. **Drupal 7 and Drupal 9 platforms will hereinafter collectively be referred to as the “Platforms”.**
- d) The content management user-base is comprised of approximately 100 staff members. Most of them are content providers and only a few (mostly developers) have higher (including administrative) application rights. The backend system administration is centralized.
- e) In the interest of the Agency and as a vital component of its daily operations, the IAEA intends to keep Drupal as a service in the cloud, maintaining cost-effectiveness and ease of operation and maintenance.
- f) This project has high visibility within the IAEA and for its Member States and is intended to deliver a high-class publishing platform and communication channel towards stakeholders and a general audience.

2. Applicable Documents

The following source of information shall be applicable for the work to the extent specified hereinafter: IAEA public web site (<https://www.iaea.org/>). In the event of conflict between the source listed above and the content of this SOW, the content of this SOW shall take precedence to the extent of the conflict.

3. Definitions, Acronyms, and Abbreviations

The following definitions, acronyms, and abbreviations shall apply throughout this SOW unless defined otherwise hereinafter:

ADFS	Active Directory Federation Services
CDN	Content Delivery Network
DDOS	Distributed Denial of Service
GIT	Software for Tracking Changes
GIT UI	Graphical User Interface for GIT
ISO	International Organization for Standardization
ITIL	Information Technology Infrastructure Library
LDAP	Lightweight Directory Access Protocol

MTTR	Mean Time to Repair
PHP	Hypertext Pre-Processor
QA	Quality Assurance
RPO	Recovery Point Objective
RTO	Recovery Time Objective
PaaS	Platform as a Service
SAML	Security Assertion Mark-up Language
SSH	Secure Shell Protocol
UTC	Coordinated Universal Time

4. Requirements

4.1. Services

The Contractor shall carry out the specific activities listed below, plus any other ancillary activities required to deliver the Services, even if not specifically mentioned:

- a) Provide a fully functional and managed, parallel running of the Platforms:
 - (i) The Platforms (Drupal 7 and Drupal 9) shall ensure capability of having a user-defined customization (e.g., custom modules, changed themes) applied to the Drupal configuration.
 - (ii) The Platforms shall allow different Drupal implementation approaches (e.g. multi-tenant, hybrid, multi-instance).
 - (iii) The Drupal 7 platform is estimated to reach the end of its life cycle by the end of 2024 and will be decommissioned. Therefore, the Contractor shall offer a solution that allows for these Platforms to operate in parallel, if feasible, with eventual phase out of Drupal 7 and sole operation of Drupal 9, following the decommissioning of Drupal 7.
 - (iv) The Platforms are expected to be fully functional, including content migration and configuration, no more than three (3) months after the Contract is signed.
- b) For each of these two separate Platforms the Contractor shall:
 - (i) Provide the operation, maintenance and administration of Drupal core and modules, as well as related underlying database services and coding (PHP) framework;
 - (ii) Deliver production, staging, QA, and development Drupal environments;
 - (iii) Support future Drupal versions within a year of new version announcements;
 - (iv) Support co-existence of at least two (2) consequent Drupal versions (and related underlying database services and coding framework);
 - (v) Support previous Drupal version (and related underlying database services and coding framework) for a minimum of two (2) years after a new version announcement;
 - (vi) Provide support for the transition period when the co-existence of IAEA sites in Drupal and other hosted IAEA web-sites/content under the <https://www.iaea.org/> is required;

- (vii) Perform and make accessible through a GIT version control system, all changes to the source code by the Contractor and customer/users (Drupal core, modules, themes/look and feel, features);
- (viii) Provide support for Gitlab, a GIT UI management and team collaboration correspondence tool, as the complete code history and team collaboration correspondence is currently managed by Gitlab.
- (ix) Provide migration of the code history and all the issues from the current to the new instance of Gitlab. Equivalent solution should be offered where Gitlab is not available;
- (x) Provide on-demand synchronization between environments;
- (xi) Provide tools for backend administration tasks, including but not limited to, performance monitoring, transition and deployment of the Drupal code from QA environment to production, overview of cloud services usage and billing, user management, and Drupal configuration changes to be performed by the responsible IAEA staff;
- (xii) Provide professional support services (including training) to design, implement and operate the relevant cloud-hosting backend services as needed. These services shall be coordinated and made available in collaboration with the IAEA team;
- (xiii) Provide Apache Solr as a search engine, installed on a separate server(s) and support full integration with Drupal;
- (xiv) Ensure the Platforms shall allow crawling by search engines;
- (xv) Provide a robust and stable caching system that allows smart partial expiration/rebuilding of nodes and files, on their update, both for front-end and back-end and is able to support the traffic size and data upload of the IAEA on daily basis and during important annual events, e.g. annual IAEA General Conference, Board of Governors etc.;
- (xvi) Ensure that none of the environments are hosted in a country that does not recognize the IAEA's Privileges and Immunities, as confirmed by the IAEA. A list of countries recognizing the Agency's status has been included as **Annex 1**. ***Note:** Only those countries where a date is listed under "Entry into Force" shall be considered as locations to store IAEA data, with Austria and the USA being considered as acceptable locations based on alternative recognition of the IAEA's Privileges and Immunities.*
- (xvii) Support execution of custom PHP code embedded in the content (PHP module);
- (xviii) Review log files for "suspicious behavior" such as repeated failed authentication attempts and proactively communicate to the IAEA and initiate a troubleshooting session to identify and fix the root cause;
- (xix) Ensure that caching configuration is correctly setup, to avoid data build up and failure of the System;
- (xx) Ensure sufficient database CPU performance at their end, to support the operational and database requirements of the IAEA for the duration of the Services; and
- (xxi) Support the migration of the code, database, files and all the settings from the currently used service to the new Platforms.

4.2 Capacity and Performance

The Platforms developed by the Contractor shall meet the minimum Capacity and Performance requirements listed below:

- a) Base capacity to accommodate 80,000-page views/day from any region of the world with an elasticity of 100%;
- b) Enable total storage to be provided for all production sites in the amount of 1000 Gigabytes with an anticipated growth of 10% per year. The total number of items stored will be 500,000 with an anticipated growth of 10% per year.
- c) Accommodate 150,000-page views/day during the Agency's peak times and main annual events. The IAEA will endeavour to communicate the dates of peak times and annual events to the Contractor at least fourteen (14) calendar days in advance. There should be sufficient elasticity to allow for increases/decreases in traffic use throughout the year.
- d) The Contractor shall have available capacity on demand to support the peak of 500,000-page views/day; and
- e) Offer time-to-first-buffer response time for 95% of all non-authenticated transactions that is not higher than 50 milliseconds.

4.3 Availability

The Contractor shall meet the Availability requirements listed below:

- a) Availability of 99.95% shall be provided with MTTR of one (1) hour for production environments. Specifically, this shall apply to both publicly available sites as well as to those supporting the content publishing process and backend administration;
- b) Follow "grandfather-father-son" principle for backups which shall be made available to the IAEA on demand;
- c) Provide availability of 99.95% with MTTR of four (4) hours for the environments other than production;
- d) Provide an encrypted weekly full backup of the production environments to the IAEA through a secure transmission method such as SSH;
- e) In case of a disaster, RPO should be 24 hours and RTO 4 hours; and
- f) Provide all Services on a 24/7 basis (server availability).

4.4 Contractor's Experience and Personnel

- a) The Contractor shall have at least five (5) years Specific Experience in the provision of Drupal Web Content Management Services, specifically Drupal 7 and 9 Platforms.
- b) The Contractor shall dedicate a qualified and experienced team to carry out services and be responsible for all of the IAEA's operational and technical requirements. Names and roles of the assigned key personnel shall be provided to the IAEA. No changes shall be made in the key personnel. If, for any reason beyond the reasonable control of the Contractor, it becomes necessary to replace any of the key personnel, the Contractor shall provide as a replacement a person of equivalent or better qualifications.
- c) The contractor shall assign at minimum the following key personnel:

- (i) **System Administrator** with at least five (5) years of proven relevant experience in system administration and management identified in this Statement of Work.
- (ii) **Senior IT Technician** as part of the team.
- d) The Contractor may include other relevant skills to the team of assigned personnel, including:
 - (iii) **Drupal Back-End Developer** with at least five (5) years of proven relevant experience. The Expert should help with troubleshooting Drupal related issues and bugs in the provided environment, and be able to provide proposals for specific requirements, e.g., coming up with optimal settings for Drupal caching, SolR server etc.

4.5 IT security

- a) The following minimum mandatory IT Security requirements must be fulfilled:
 - (i) The Platforms shall provide adequate gateway techniques to control access (e.g., firewall, reverse proxy, or equivalent);
 - (ii) Provide secured access to the “backend” of all the hosted environments (development, QA, staging, production) and related management consoles;
 - (iii) Provide assistance for audit and forensic investigations;
 - (iv) Provide immediate and historical access level details about all of the Contractor’s employees/consultants/subcontracted staff having access to the IAEA Drupal environments;
 - (v) Only dispose of equipment when deletion of data on the equipment has been confirmed by the IAEA;
- b) The following are minimum desirable IT Security requirements to be provided by the Contractor:
 - (i) An Identity Provider or equivalent to be used in conjunction with the IAEA ADFS/SAML authentication method for Drupal developers and Drupal end-users (e.g., site editors, content providers);
 - (ii) An isolated network for each environment;
 - (iii) DDOS attack protection;
 - (iv) Transfer of relevant log files to the IAEA in near-real time (using access to the remote servers via SSH, API integration or equivalent);
 - (v) Conduct regular vulnerability scans at least once per quarter and provide reports to the IAEA;
 - (vi) All systems’ instances timed in UTC;
 - (vii) Compliance with ITIL for service management, ISO 27001 (or other applicable standard) for Security Management and adherence to the CIS hardening benchmarks and standards, and
 - (viii) Be fully responsible for daily 24/7 pro-active monitoring to take appropriate mitigating actions in the event of an IT security breach or other IT threat.

4.6 Communication, Documentation and Reporting

- a) The Contractor shall meet the Communication, Documentation and Reporting requirements listed below:

- (i) Provide a telephone-number that provides a human response within one-hundred eighty (180) seconds;
 - (ii) Provide technical support during IAEA working days and business hours only from 9:00 to 17:00 CET Monday to Friday and independently from holidays in the country of the Contractor, with initial response within sixty (60) minutes for urgent, five (5) hours for high priority, one (1) working day for normal priority and five (5) working days for low priority issues;
 - (iii) If required by the IAEA, provide general technical support, as described in 4.6.a.ii above, outside of business hours, to be invoiced and paid on a “time and material” per-hourly basis each month, as supported by relevant documentation provided by the Contractor;
 - (iv) Unless approved by the IAEA, no technical support work by Contractor’s personnel, including back up, cache and hard-drive clean-up, shall be done during the weekends or after the IAEA working days and business hours outlined in section 4 (a)(ii) above and IAEA official holidays. The official holidays of the IAEA for the period 2022 to 2023 are shown in **Annex 2**. Holidays for future years will be communicated to the Contractor, as necessary. The Contractor shall request a written approval from the IAEA prior to commencing any work for any activity, support service or operational task which is outside of the agreed framework outlined above; and
 - (v) Provide *ad hoc* technical support to the IAEA for Drupal software, on an ‘as needed’ basis each month, to be invoiced and paid for on a ‘*time and material*’ per-hourly basis each month, as supported by relevant documentation provided by the Contractor.
- b) The Contractor should endeavour to meet the Communication, Documentation and Reporting requirements listed below:
- (i) Support should be accessible through dashboard, for example Redmine;
 - (ii) Provide Web-based interface for the communication on all service aspects;
 - (iii) Agree to and comply with a notification scheme for incidents, changes and other issues; and
 - (iv) Provide immediate reporting (i.e., dashboard) to review the services provided, including: *Availability, Usage (including capacity and performance), Cost (including status of invoices and payments), and all service management aspects*. IAEA’s assigned personnel should have log-in access to such dashboard.

4.7 Exit obligations

The Contractor shall carry out the Exit obligation requirements listed below:

- a) Return data (including all the content, configuration, code, user information) upon termination of the Contract;
- b) Retain all data for at least six (6) months after termination to allow for the IAEA to transfer the data. After confirmation by the IAEA of the data transfer, the Contractor shall delete all IAEA data including all copies and backups. The Contractor shall provide written confirmation of the above; and
- c) The format in which data shall be returned shall be standard backup- format such as ZIP or TAR archive.

4.8 Configuration Management and Change Management

The Contractor should meet the following value-added Configuration Management and Change Management features:

- a) Changes to the system (e.g., Drupal core, modules, themes, look and feel, database) should be controlled via a web-based interface, including development, QA and staging environments for the application layer;
- b) APIs should be available to automate implementation and operational tasks (e.g., base lining QA or production environment); and
- c) Provide a forward-looking schedule of new releases and expected features.

5 Deliverable Items

5.1 The Contractor shall provide the following one-time deliverables, delivered in PDF format:

- a) High-level Architecture of IAEA Drupal in the Cloud outlining how IAEA Drupal, including development, QA, staging, and production environments, is positioned within the whole hosting environment;
- b) Verification Plan in the format of a checklist allowing the IAEA to confirm that all the points as outlined in the Contract are present before going live;
- c) Documentation and Source or Package for the Version Control System (reference requirement 4.1 b (vii));
- d) Training Outline and Schedule (reference requirement 4.1 b (xi)) on an “as and when required” basis; and
- e) Outline of Recommended Professional Services in the context of IAEA Drupal setup (reference requirement 4.1 b (ix), 4.1 b (x)).

5.2 The Contractor shall provide the following on-going (recurring) reports delivered monthly, due by the 10th day of each month, throughout the course of the Contract, in electronic format that contain at minimum the following information:

- a) Usage reports in terms of capacity and server and database usage, statistics and trends;
 - (i) Security compliance issues including incidents and reports from performed independent security audits;
 - (ii) Notification of updates and downtime due to planned changes in the hosting environment, including forward looking schedule of new releases and expected features; and
 - (iii) Report of open and closed tickets with issue resolution included; All on-going reports should be available online.
- b) The Contractor shall provide the IAEA with a security monitoring system to detect and alert potential hacker attacks like DDOS.

- c) The Contractor shall maintain an electronic record of all major faults or errors, indicating the nature of the fault or errors as well as the date, time and the duration of such incidents and listing the action required in repairing the problem;
- d) The Contractor shall provide and maintain a table with assigned responsibilities for the following supporting functions: *Service Desk, Applications Management, IT Operations Management, Technical Management.*

6 Back-up and Restore Process

- a) The Contractor shall provide a backup and restore process to maintain the availability specified in section 4.3. The backup and restore process shall, at minimum, address the following points:
 - (i) The backup procedure, timing and frequency shall be described together with the items that are backed up (e.g., Data, Configuration, Databases, logs etc.);
 - (ii) The backup data shall be sent to an external storage defined with the IAEA;
 - (iii) The data should be encrypted;
 - (iv) The frequency of backup shall be configurable and scheduled during the business hours; and
 - (v) The backup should allow differential, full and long-term type of backups.

7. Installation and Training Services

- a) The Contractor shall install the System remotely.
- b) The Contractor should provide a two (2) day training for up to three (3) staff of the IAEA in the operation and maintenance of the System at the IAEA's location or remotely immediately after the installation of the System.
- c) Any training provided shall be conducted in the English language.

ANNEX 1 – Countries that have recognised the IAEA’s Privileges and Immunities

See separate file.

ANNEX 2 - IAEA's Vienna Headquarters Holidays – 2022 and 2023

DATE	TYPE OF HOLIDAY
2022	
Monday, 3 January 2022	in lieu of 1 January (New Year's Day)
Friday, 15 April 2022	Good Friday
Monday, 18 April 2022	Easter Monday
Monday, 2 May 2022	in lieu of 1 May (May Day)
Tuesday, 3 May 2022	Eid al-Fitr
Monday, 11 July 2022	in lieu of 10 July (Eid al-Adha)
Wednesday, 26 October 2022	Austrian National Day
Monday, 26 December 2022	in lieu of 25 December (Christmas Day)
Tuesday, 27 December 2022	in lieu of 26 December (St. Stephen's Day)
2023	
Monday, 2 January 2023	in lieu of 1 January (New Year's Day)
Friday, 7 April 2023	Good Friday
Monday, 10 April 2023	Easter Monday
Monday, 24 April 2023	in lieu of 22 April (Eid al-Fitr)
Monday, 1 May 2023	May Day
Thursday, 29 June 2023	Eid al-Adha
Thursday, 26 October 2023	Austrian National Day
Monday, 25 December 2023	Christmas Day
Tuesday, 26 December 2023	St. Stephen's Day