

**Standard Operating  
Procedure  
for  
Open API Development**



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## Standard Operating Procedures for accessing APIs on API Setu

**API Setu**, is an Open API (Application Programming Interface) Platform from Ministry of Electronics and IT, Government of India.

### Background

An **'Open API'** policy was notified by Ministry of Electronics and IT (MeitY) in July 2015 with an objective to develop an open and interoperable platform to enable seamless service delivery across government, thereby providing access to data & services and promoting citizen participation for the benefit of the community. It was felt that to provide impetus to the policy implementation an API platform to act as an API Marketplace cum Directory Portal is necessary. Hence MeitY has initiated API Setu also known as the Open API Platform project in March 2020. This platform aims to bring the policy into realization.

### Characteristics of API Setu

The platform will provide features of an API Directory, an API Gateway and API Management Portal.

#### (A) API Directory

The key to easier integration is to be able to find and search for the available APIs from a central API repository will all necessary details such as the API Provider, endpoints, authentication and documentation. Thus, the central API Directory is a key feature of the platform that provides following functionality:

- i. Categorized Directory of APIs
- ii. Facility to search/discover API by Provider, date or service
- iii. Detailed API documentation compliant to OpenAPI 3.0 specification required to consume the APIs
- iv. Publisher/Consumer/Developer Portal to maintain account and API information
- v. Sign in and Sign Up facility for API publishers and consumers.
- vi. Facility to test and subscribe for APIs

#### (B) API Management Portal

The platform will act as a bridge between API Consumers and API Providers. It is envisioned to provide the features for API management:

- i. API lifecycle management such as configure, test, publish, monitor.
- ii. Support common API authentication and authorization using client id, client secret, API key and OAuth2.0.
- iii. Rate Limiting and Throttling for API consumers
- iv. API usage logs for debugging and analysis
- v. API monitoring and performance analysis
- vi. HTTP Caching of API data
- vii. Ensure the data in machine readable format

- viii. Maintain and enforce Meta-Data and Data Standards and Schemas for information sharing

### (C) **Open API Characteristics**

The APIs should have following characteristics:

1. The relevant information being provided by all Government organizations through their respective e-Governance applications shall be open and machine readable.
2. All the relevant information and data of a Government organization shall be made available by Open APIs, as per the classification given in the National Data Sharing and Accessibility Policy (NDSAP-2012), so that the public can access information and data.
3. All Open APIs built and data provided, shall adhere to National Cyber Security Policy.
4. The Government organizations shall make sure that the Open APIs are stable and scalable.
5. All the relevant information, data and functionalities within an e- Governance application or system of a Government organization shall be made available to other e-Governance applications and systems through Open APIs which should be platform and language independent.
6. A Government organization consuming the data and information from other e-Governance applications and systems using Open APIs shall undertake information handling, authentication and authorization through a process as defined by the API publishing Organization.
7. Each published API of a Government organization shall be provided free of charge whenever possible to other Government organizations and public.
8. Data sharing via each published API shall be governed by Consent Management Framework.
9. Each published API shall be properly documented with sample code and sufficient information for developers to make use of the API.
10. The life-cycle of the Open API shall be made available by the API publishing Government organization. The API shall be backward compatible with at least two earlier versions.
11. All Open API systems built and data provided shall adhere to GoI security policies and guidelines.
12. Government organizations may use an authentication mechanism to enable service interoperability and single sign-on

### **Consent Framework:**

Consent capture and use process is comprised of two flows:

**Consent Flow** wherein consent is created and the consent parameters are shared with the relevant entities; and a **data flow**, where the actual data access, based on user consent, happens.

In the data flow, the consent artifact is utilized to enable the data consumer to access the data held by the data provider. In consent flow, where the user grants permission for a certain kind of data access between a data consumer and a data provider. The consent flow must necessarily involve an interaction between the consent collector, and the user, at the end of which a consent artifact — an electronic representation of the consent given by the user — is generated and shared by the consent collector with

either the data consumer or the data provider, depending upon who initiates the data share. This consent artifact is used in the second flow, the data flow, for the actual data share to happen, sometimes repeatedly.

The consent and data flows operate asynchronously in an API-driven manner, which ensures efficiency and resilience. Events at various stages of the consent and data flows are logged and digital signatures are used to ensure security in each of the flows. The separation of the consent and data flows is a key feature of the consent framework. It is important for data flows to be executable asynchronously without the engagement of the user. This framework specifically enables this separation.

**Consent Revocation:** Data principal/ owner is in full control of revocation of the consent.

## Current Status

- The API Platform is ready. The portal has published over 1012 APIs provided by many Central and State Government departments on the platform. Many of the major departments have already provided APIs such as Driving License, Vehicle Registration, PAN, CBSE and state boards' educational certificates, eDistricts in NeGD's DigiLocker application and these APIs have been provided through the Open API platform. The platform is hosted at <https://apisetu.gov.in>.
- The APIs are also being consumed by various applications of public and private entities including DigiLocker, eSanad, Delhi University, Haryana Higher Education for verification of data.
- The platform currently records over 1.5 Crore transactions on average every month.

## How to access?

URL : <https://apisetu.gov.in>

**On-boarding request:** Request can be made on the link <https://apisetu.gov.in> and click 'get started' and provide requisite details.

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**API Setu** Products API Directory API Policy Data Standards Resources [Sign In](#)

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## Open API Policy by MeitY, Government of India

Attached as Annexure