The National Information Infrastructure (NII)

Implementation document - March 2015

The NII as a framework

The NII is a management framework for the most strategically important data held by government. It is composed of:

- a set of guiding principles
- a curated list of the most strategically important data
- a governance structure
- baseline quality criteria

and documents the following:

- relevant legislation related to the data
- vocabularies and code lists
- licensing
- standards applicable to the data and data services
- guidance on use of the data
- metadata

Defining strategically important data

Strategically important data is data held by the government which relates to the fundamental components of our society and is likely to have the broadest and most significant economic impact. Although the NII is not limited to data released freely with an open license, thereby allowing reuse, strategically important data will yield its greatest value if made available and accessible outside of government.

Principles of the NII

Principle 1: Safe

Any data under the NII that is made publicly available must comply with data protection legislation.

Principle 2: User-centric

The NII is centred on user needs and will follow the government's Digital by Default Service Standard.[1]

Principle 3: Well governed

In order to be effective, the NII must be governed at the most senior level with ministerial backing, authority over the framework and with the support of data controllers and users.

Principle 4: Reliable

Users must be able to rely on the data being available in a timely manner, easily accessible and in the appropriate formats.

Principle 5: Maintained

The services behind the data, and the data itself, must be maintained by its data controller to ensure access and sustainability throughout the lifecycle of the data.

Principle 6: Flexible

As the NII progresses in identifying key strategic data, it must be able to embrace data outside the sphere of government that may be of national importance.

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[1]https://www.gov.uk/service-manual/user-centred-design/user-needs

Principle 7: Interconnected and usable

The NII aims to be interconnected so data can be identified and connected to other data in standardised, documented ways.

While the data list and other components of the NII may change over time, the fundamental principles of the framework should remain.

Components of the NII

Standards

Standards enable data services to interoperate based on commonly agreed, fully documented and reliable processes and formats.

Standards improve the flexibility and ability of government to cooperate with other bodies, citizens and businesses and makes it easier for data users to interact with government data.

Standards for the NII are primarily defined by the UK government Open Standards Principles.[2] Standards for the NII are also informed by the decisions of the Open Standards Board and those regulatory standards already in use, such as the INSPIRE standards for spatial data and related services.[3]

For Local Authority data, when applicable to the NII, any standards agreed through a Local Government sector led approach via the Local Government Association or other will stand as valid.

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[2]https://www.gov.uk/government/publications/open-standards-principles/open-standards-principles#open-standard---definition
[3]http://standards.data.gov.uk/meeting/open-standards-board-terms-reference

Data List

A list of the most strategically important data accompanied by rich metadata and easily discoverable.

Vocabularies and code lists

In order to understand what a term in a dataset means (e.g. where a dataset contains the word 'pool', is it referring to a swimming pool or referring to the game of pool?), data controllers use vocabularies to provide a definition of terms in relation to the context of the dataset (which would reveal that 'pool' in dataset X means 'swimming pool').

Another useful device is the use of code lists, which, similar to vocabularies, provide a canonical list of arbitrary codes used to identify 'things' in the data. One of the most well known examples of code lists is the list of abbreviations for countries (e.g. GB for Great Britain, or UK for the United Kingdom). These vocabularies and code lists increase the contextuality of the data, making it easier to use.

The NII will document vocabularies and codes in use. Data.gov.uk will provide reference services for the NII data list when appropiate.

In order to establish best practices, the NII board will work with data controllers and other pertinent bodies to agree future common vocabularies and code lists.

Licensing

The default license for open data will be whichever is the most current version of the Open Government License at the time.[4]

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[4]http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/

Quality commitments

Quality is fundamental for data to be useful, particularly for data considered to be of the highest importance and value to the nation.

The NII will provide a set of conditions for [data pertaining to quality](#). For NII data that is open, the principles of the Open Data Charter will apply.[5]

Service Levels

For users to rely on publicly available government data they must be assured of how reliable the provision of the data is and what, if any, are the caveats and conditions attached to a dataset or data service.

The NII documents basic levels of service commitments, at a minimum, for publicly available data, with a statement highlighting the ownership and data management lifecycles in use and with a clear explanation of the terms of the service.

Statutory relationship

In many instances, data is gathered by government directly or indirectly because of a legal requirement.

When applicable, the NII will document the legal framework that originates, limits or controls data, its uses and its purpose.

The NII does not establish new legislative gateways for data.

The government online catalogue of legislation, legislation.gov.uk, will be the expected mechanism to reference this information.

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[5] https://www.gov.uk/government/publications/open-data-charter

Annexes and technical annexes

The NII will reference a cluster of annexes detailing any standards, structures and practices that apply to the framework as well as the structure of the governance. These annexes will benefit from a process of continuous improvement throughout the life of the NII and will be overseen by a NII Board or equivalent.

These technical annexes can change with time or be superseded by other versions as time and technology dictates.

Selecting data for the NII data list

The NII is concerned with two critical aspects of data:

Core subject data

This is data about things. It provides validated operational information about subjects.

Example: Opening times, timetables, eligibility, financial data, availability of services or commodities, inspections, metrics, caseloads, outcomes.

Core reference data

This is the data that connects different datasets together. It provides points of interconnection between public data, for example temporal and geographical data (maps or primarily geocoded data), as well as definitions and code lists, including vocabularies.

It gives unique identifiers to subjects such as organisations, sites, assets, publications (eg legislation), services and so on.

Example: Types of school, health conditions, a council's boundaries, the geographical extent of a ward, a geospatial file, vocabularies and code lists.

Data controllers will use these two definitions to assess, from their data holdings, which data assets and services should be considered core subject and core reference.

An NII board, or equivalent body, (see governance) will be tasked with consulting on the best way to identify data to be part of the NII for the future, including options for citizen participation.

Data conditions for the NII

NII data will be subject to a series of quality controls both for data and services. These quality controls will support connectivity and usability of the data and should be defined through policy and guidance (details in conditions for data and services).

NII Annexes

Annex A
Governance

NII champion

1. The NII will have a single point of accountability, a senior government representative who will own the leadership and vision for the NII, as data champion across government.

2. This role will function at the CIO or Chief Data Officer level and will have access to ministers and other senior stakeholder groups such as the Government Digital Leaders network, the Government Technology Leaders network, and the Devolved Administrations; advice from external experts and open data consumers should also be sought .

3. The champion will make decisions to protect the integrity of the NII assets, in collaboration with the data/services controllers.

4. For central government the NII will be managed at the government data service level to provide a complete overview/access to the processes and activities of publishing, capturing and maintaining data across government.

5. While the Public Sector Transparency Board, or an equivalent, is the logical escalation point for any data deemed to be releasable as open data, the NII champion is the ultimate senior point to resolve issues and holds ultimate authority and responsibility for the framework.

The NII Board

1. In order for the NII to continue reflecting the needs of both government data use and data users outside the government domain, an NII board or equivalent, chaired by the data champion, should be created.

2. The NII board should contain representatives from the open data user community as well as data service controllers from within government, Local Authorities and Devolved Administrations.

3. The NII board will determine the operation and future of the NII and should also be concerned with the adherence, by data controllers, of the quality conditions of the NII, the timeline for publication for those assets listed but not made available and the checkup of progress against any commitments made by the data controller.

4. The NII board will handle propositions for new entries to the NII data list and will consult early on further ways to inform data selection, including public participation.

5. Upon its creation, the NII board will revisit the governance structure and make whatever adjustments are required.

Data controllers

1. Data controllers must add an NII responsibility to their data sector boards where applicable. The boards should meet no less than twice a year to discuss new potential entrants to the NII to be proposed to the NII board, progress on quality commitments and any other issues pertaining to the running of services behind their NII data.

Technical Annex 1
Baseline conditions for data and services

Data

- publicly document current structure of data (for example: columns, column position, header row for tabular data)

- respect the structure of the data (avoid renaming items or moving position of columns etc.)

- inform users of any changes to data structure and document them. If possible explain publicly via data.gov.uk on why the change is needed

- publish in open formats

- document and abide by any existing standards appropriate to the data or those standards adopted by the government standards board. Metadata will also provide reasons for non-compliance when appropriate and information on timelines for adherence to applicable standards

- data.gov.uk will prominently display 'Open Definition' open data badges on all data that is open as defined by the Open Definition to certify clearly to users and consumers which data is open and which is not

- data.gov.uk will publish ODI Open Data Certificates for all NII data. When it is not possible, due to technical complexities, for data.gov.uk to grant an automatic certificate, it is the responsability of the data controller to obtain the certificate and provide the certificate link to data.gov.uk

- data will be published according to the frequency advertised (monthly, quarterly, etc). In the rare occurrence where the frequency cannot be met, reasons for why and an estimate of publication date will be provided via the dataset in data.gov.uk

- all data on the NII should aim to abide by definitive, published dictionaries as well as by any code list pertinent to the subject matter

- for URI creation, the NII abides by the URI for government guidance[6] and the persistent resolvable identifiers for government standard[7]

- not all data in the NII will be able to be released as open data or be published (due to legal, security or existing IP restrictions). All NII items will clearly state in the metadata, what can and cannot be done with data that is not published under the OGL, as well as provide a machine readable file, in an open format, with any attribution statement. This information will also include details of any subsequent license terms related to access mechanisms that may impact the use of the data

Services

- data controllers will respond to questions about their data raised via data.gov.uk

- all NII open data must have both metadata and a data API. For open data in the NII not dependent on a live feed, data.gov.uk will provide data API access to those files that require it, via a cached version

- all open data will allow the option to perform a bulk download of the data, as a whole or by year when applicable

- for services (such as live data feeds and search based query services) the data controller must provide, when technically feasible, a bulk download functionality from a chosen point in time

- for open data in the NII, metadata should contain links to the actual data file, not an intermediary page, unless inappropriate for the type of data, which should only occur in exceptional circumstances

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[6] https://www.gov.uk/government/publications/designing-uri-sets-for-the-uk-public-sector
[7] http://standards.data.gov.uk/profile/persistent-resolvable-identifiers-standards-profile

- information on upcoming changes or service outages will be made available and easily accessible

Other annexes

(these can be purpose-made or adopted)

Annex	Area of impact	Title	URL
Technical Annex 1	File structure, metadata, contracts	Open Contracting - details on how contracting data and documents can be published in an accessible, structured and repeatable way	http://ocds.open-contracting.org/standard/r/1__0__RC/en/standard/intro/
Technical Annex 2	Character encoding	Cross platform character encoding profile - This standards profile ensures that character encoding is considered in all text-based formats that are standardised by government bodies	https://www.gov.uk/government/publications/open-standards-for-government/cross-platform-character-encoding-profile
Technical Annex 3	URIs	Persistent resolvable identifiers - This standards profile provides the foundation to move towards the use of resolvable URLs to identify things and codes within data published by government	https://www.gov.uk/government/publications/open-standards-for-government/persistent-resolvable-identifiers