Single Digital Gateway

Technical Specifications

APIs for the Single Digital Gateway

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1. INTRODUCTION

This document provides the specifications for the different web APIs to be implemented to support the transfer of statistics and feedback data from SDG Front Office tools or Member States systems to the common data repository in the SDG Back Office.

2. OVERVIEW

There are four APIs in scope of this project to transfer data from the Common IT tools or Member States tools to the common data repository for further processing as well as analysis and visualization purposes. One additional API is also foreseen to provide the message ID to be used when calling any of the main four APIs above.

In the table below is included a summary of the payloads to be transferred via the APIs and frequency of transmission. The API data definition files, so called "swaggers", are created in a way to contain this information as outlined below.

	Statistics		Feedback on Quality		
Type of Service	**Information Services**	**Assistance Services**	**On-line procedures**	**Information Services**	**Assistance Services**
Payload	Number of visits	Number of requests		Found what you were looking for? (mutually exclusive options: YES/NO/PARTLY)	
	Countries from which users are visiting the webpage	Subject matter (reference to the Areas used in the repository of AS)	Rate this procedure (star rating from 1 to 5) – mandatory field	Rate this page (star rating: from 1 to 5)	Rate the service provided (star rating from 1 to 5)
	Type of devices used to visit the webpage	Categories: - citizens or business -cross-border or national	Help us improve (open text box) – optional field*	Help us improve (open text box) – optional field*	Help us improve (open text box) – optional field*
		Average response time over a period of 6 months			
	Context data	Context data	Context data	Context data	Context data
			Additional survey	Additional survey	Additional survey
Frequency	Once per month	Twice per year	Monthly (in bulk) for alternative tool	Monthly (in bulk) for alternative tool	Monthly (in bulk) for alternative tool

*NB: The content of the open text box is not required to be provided when the feedback is collected by MS using an alternative feedback tool.

For information services only, MS using the common feedback tool can choose between the form including the open free text and the one without.

3. API FOR THE UNIQUE ID

This API has the purpose to generate a Unique ID that has to be used when calling one of the other web APIs for transmitting statistical or feedback data for a specific reference period. Before calling the web APIs to transfer Statistical data or Feedback data, the API for unique ID generation must be called first. The unique ID received in response should then be injected into the specific field in the relevant web API used to transfer a specific payload for a particular reference period. While using the unique ID for every web API call, the following points should be taken in account:

- A specific Reference period always corresponds to a specific Unique ID
- The Member States should maintain a mapping between the Unique ID and the Reference Period for which it is used.
- If any of the web APIs are called to resend the data for a particular reference period for which a given Unique ID was generated, the Unique ID API should not be invoked again.
- Also when the consumer of this web API (i.e. any Member State service) wants to modify the payload already sent and resend it for the same reference period, the same Unique ID should be used again.
- When the SDG Back-office receives data for a Unique ID which is already present in the system, it will overwrite the existing data set with the new one.

The request and response structure for this API is described in the table below.

Request
No parameter required in the request

Response			
Parameter	Type	Required (Yes / No)	Notes
unique-id	string	Yes	Unique Id to respect to specific reference period for all web APIs

4. APIS FOR USAGE STATISTICS

Statistics on Information Services

This web API must be used for transferring the statistical data collected on Information services for a specific reference period to SDG common data repository. The frequency for sending this data is one month.

The web API does not allow sending data for multiple reference period at once keeping the size of the JSON file within the allowed limit of 50 Mb. In case the data for a reference period is required to be divided due to the size limit, or the data for a reference period required to be modified / updated, the API should be called multiple times with specific reference period and related Unique IDs.

The request and response structure for the API is described in the table below.

Request			
Parameter	**Type**	**Required (Yes / No)**	**Notes**
informationServiceStats	Object	Yes	An object representing statistics on information services.
uniqueId	string	Yes	Unique ID for information services statistics submission for a specific reference period received from the UniqueID web API call.
referencePeriod	Object	Yes	Container of the Start Date and End Date of the reference period.
startDate	string	Yes	Start Date of the reference period.
endDate	string	Yes	End Date of the reference period.
transferDate	string	Yes	Date Time when the web API is called
transferType	String (enum)	Yes	Transfer type should be used as 'API' to call this web service.
nbEntries	integer	yes	No of total entries including all source URL for which the statistics are sent.
sources	Array of Objects	Yes	An object representing statistical information about one source URL. Array of objects because a given Reference Period is associated to several URLs.
source	object	Yes	Object holding the statistical data
sourceUrl	string	Yes	URL for which the statistics is collected.
statistics	Objects	Yes	An object representing the statistical information for one particular source URL.
nbVisits	integer	Yes	Total number of visits to the URL
originatingCountry	string	Yes	Country from where the visits are originated to the URL.

country	String enum	Yes	This field holds the country codes as per the 'ISO 3166-1 alpha-2'.
			
			enum:
			    – AT
			    – BE
			    – BG
			    – CY
			    – CZ
			    – DE
			    – DK
			    – EE

			– EL – ES – FI – FR – HR – HU – IE – IS – IT – LI – LT – LU – LV – MT – NL – NO – PL – PT – RO – SE – SI – SK
deviceType	string	Yes	Type of Device used to visit the URL

Response	
Code	Message
200	OK

Statistics on Assistance Services

This web API must be used if the statistical data collected on assistance and problem-solving services for a specific reference period is to be transferred to the common data repository in an automated way.

Due to the specific nature of the assistance services, a manual upload of the statistics will be supported by the SDG Back-office system. In this case, there is no need for the service provider to transfer the data via the API.

The frequency of collecting this data, both in a manual or automated way, is six month (twice per year).

The web API does not allow sending data for multiple reference period at once keeping the size of the JSON file within the allowed limit of 50 Mb. In case the data for a reference period is required to be divided due to the size limit, or the data for a reference period required to be modified/updated, the API should be called multiple times with specific reference period and related unique IDs.

The request and response structure for the API is described in the table below.

Request			
Parameter	**Type**	**Required (Yes / No)**	**Notes**
assistanceServiceStats	Object	Yes	An object representing statistics on assistance services.
uniqueId	string	Yes	Unique ID for assistance services statistics submission for a specific reference period collected from the Unique ID web API call.
referencePeriod	object	yes	Container for start date and end date
startDate	string	Yes	Start Date of the reference period.
endDate	string	Yes	End Date of the reference period.
transferDate	string	Yes	Date Time when the web API is called
transferType	String (enum)	Yes	Transfer type should be used as 'API' to call this web service.
nbEntries	integer	yes	No of total entries including all assistance and problem solving services for which the statistics are sent.
sources	Array of Objects	Yes	An object representing statistical information about one assistance and problem-solving service. Array of objects because a given Reference Period is associated to several assistance and problem-solving services.
source	object	Yes	Object holding the statistical data
sourceUrl	string	Yes	URL of the assistance and problem-solving service for which the statistics is collected. The URL is used as identifier of the service. If the service does not have a URL (e.g. there is no website) the identifier assigned by the system in the repository could be used instead.
statistics	Object	Yes	An object representing the statistical information for one particular assistance and problem-solving service.
urlStatistics	Array of Objects	Yes	Array of objects because the same assistance and problem-solving service could have several combination of statistics depending on different values of the more granular fields on which the statistics are collected.
nbRequests	integer	Yes	Total number of requests for the assistance and problem-solving service
categoryOfUser	String (enum)	Yes	Enumeration as "citizen", "business"
subjectMatter	string	Yes	Specific subject matters for an assistance service. The list of subject-matters will be agreed with the assistance services and provided at a later stage.
situationOfUser	string (enum)	Yes	Enumeration as "cross-border", "national"
avgResponseTime	integer	yes	average response time in days

Response	
Code	**Message**
200	OK

5. APIS FOR FEEDBACK ON QUALITY

Feedback on Quality First Level Survey

This web API must be used for transferring the data collected in the first level user feedback regarding feedback on information services, assistance and problem-solving services or online procedures.

To provide the feedback, if the SDG common user feedback tool is used, the web API is called on near real-time basis. If the feedback data is collected separately through an alternative national tool and sent via this web API, then the frequency of sending this data is maximum one month, which also means that the reference period to send the first level user feedback data is one month. This is why the reference period in this API is optional, as this API will also be called by the common feedback tool, which sends the feedback data in real-time.

If the first level user feedback data is collected by Member States using their own alternative tool, the data collected should be mapped to the available fields in the swagger. This part of mapping should be done at the Member State side, as the data may be different depending on the different tools used.

The web API does not allow sending data for multiple reference period at once keeping the size of the JSON file within the allowed limit of 50 Mb. In case the data for a reference period is required to be divided due to the size limit, or the data for a reference period required to be modified / updated, the API should be called multiple times with specific reference period and related unique IDs.

The request and response structure for the API is described in the table below.

Request			
Parameter	**Type**	**Required (Yes / No)**	**Notes**
feedback	object	No	Object holding all the information about a single feedback. The specific REST API path for this object should be used only for SDG Front Office tool.
category	string (enum)	Yes	Enumeration as "Information", "Procedure", "Assistance"
rating	Integer (enum)	Yes	Rating of the service received of the related categories.
source	string	Yes	URL of the source service. If URL is not present, for instance when collecting feedback about assistance services, the identifier of the service in the SDG repository should be used instead.
foundInformation	String (enum)	No	This field must be filled in only when the feedback is about Information Services. One of the enumeration ["Yes", "No", "Partly"].
helpUsImprove	string	No	Additional information received from the end-user in the open text box is mapped to this field. It applies only to the common feedback tool where the open free text field is available.
feedbackBatch	object	No	Container for the feedback data for a reference period. The REST API path related to this object should be used by Member States.

uniqueId	string	yes	Unique ID for feedback submission for a specific reference period received from the Unique ID web API call.
referencePeriod	object	Yes	Container of start date and end date
startDate	string	Yes	Start Date of the reference period.
endDate	string	Yes	End Date of the reference period.
transferDate	string	Yes	Date Time when the web API is called
transferType	String (enum)	yes	Enumeration as "API", "Manual". Transfer type should always be as 'API' to call this web service.
nbEntries	integer	Yes	No of total entries including all services for which the feedback is sent.
feedbacks	Array of Objects	yes	An object representing the feedback for different source services. This object internally refers to the object 'feedback'.

Response	
Code	**Message**
200	OK

Feedback on Quality Second Level Survey

The second level survey can be accessed and filled in two ways:

1) The end-user fills up the first level user feedback via the common user feedback tool or an alternative user feedback tool and clicks on 'submit feedback'. On successful submission, a Thank You page is displayed with the link to the second level survey.
2) The end-user of a Member State service can directly access the second level survey, if such a service is using its own feedback tool for the first level user feedback.

Similarly to the first level user feedback, the web API will be called both from the common and from the national (alternative) feedback tools. If called from common tool, a single instance of feedback is sent in one call. If the web API is called from a national service, it is called to send all the feedback received for different URLs collectively for a specific reference period. For Member States the reference period to send the feedback data is maximum one month.

The questions available for the second level survey for the different types of service is presented in the following tables. When mapping the answers to the web API the abbreviations of the questions should be properly maintained as described in the swaggers itself.

NB: The final text of the questions may change following user testing sessions.

User survey for detailed feedback on information

Questions	Answers
Did you find the information user-friendly (could you easily identify which parts of the information is relevant to you?)	(star rating from 1 to 5)
Was the information accurate?	(star rating from 1 to 5)
Was the information sufficiently comprehensive?	(star rating from 1 to 5)

Was the language clear to you?	(star rating from 1 to 5)
Was the information easy to find?	(star rating from 1 to 5)
Was the information well-structured?	(star rating from 1 to 5)
Was the information up-to-date?	(star rating from 1 to 5)
Was the date of the last update (publication) indicated on the page?	YES/NO/I do not know
Was the name of competent authority or entity responsible for the content of the information published on the page?	YES/NO/I do not know
Did the page include references, links to legal acts?	YES/NO/not relevant
Was the information available in English?	YES/NO/I do not know

User survey for detailed feedback on cross-border accessibility of an online procedure

Questions	Answers
Were the instructions for completing the procedure available in English?	YES/NO/I do not know
Was it easy to fill in the form/submit required information?	(star rating from 1 to 5)
Were you able to identify or authenticate yourself using your national eID or eSignature?	YES/NO/not relevant
Could you provide required evidence of compliance with applicable requirements in electronic format?	YES/NO/partly/not relevant
Were you able to pay any fees online?	(YES/NO/not applicable)

User survey for detailed feedback on an assistance or problem solving service

Question	Answers
Was it made sufficiently clear to you in advance what you could expect from the service offered?	(star rating from 1 to 5)
Did you find it easy to submit your query?	(star rating from 1 to 5)
Was your request handled within a reasonable time?	(star rating from 1 to 5)
Were you informed about any delays?	(YES/NO/not applicable – there were no delays)
Were you able to pay online for the service?	(YES/NO/not applicable – there were no fees)

The request and response structure for the API is described in the table below.

Request			
Parameter	Type	Required (Yes / No)	Notes
components	object	No	Object holding Definition of parameters. Not for mapping.
rating	integer	No	User rating from 1 (worst) to 5 (best).
yesNoUnknown	String (enum)	No	enum: - Yes - No - Unknown

yesNoIrrelevant	String (enum)	No	enum:
			    - Yes
			    - No
			    - Irrelevant

YesNoPartlyIrrelevant	String (enum)	No	enum:
			    - Yes
			    - No
			    - Partly
			    - Irrelevant

feedbackBatch	Object	No	Container for the feedback data for a reference period. The REST API path related to this object should be used by Member States.
uniqueId	string	Yes	Unique ID for feedback submission for a specific reference period collected from the Unique ID web API call.
referencePeriod	object	Yes	Container for start date and end date
startDate	string	Yes	Start Date of the reference period.
endDate	string	Yes	End Date of the reference period.
transferDate	string	Yes	Date Time when the web API is called
transferType	String (enum)	yes	Enumeration as "API", "Manual". Transfer type should be always as 'API' to call this web service.
nbEntries	intiger	Yes	No of total entries including all source URL for which the statistics are sent.
feedbacks	Array of Objects	yes	An object representing the feedback for different source URLs. This object internally refers to the object 'feedback'.
feedback	object	No	Object holding all the information about a single feedback. The specific REST API path for this object should be used only for SDG Front Office tool.
source	string	Yes	The URL of the webpage
survey	object	Yes	Container of the answers of different questions. It hold three mutually exclusive objects; - informationSurvey - assistanceSurvey - procedureSurvey
assistanceSurvey	object	No	Object holding all the answers for the questions related to Assistance services
clearOffer	object	Yes	$ref: '#/components/schemas/rating
delays	object	Yes	$ref: '#/components/schemas/rating'
easiness	object	Yes	$ref: '#/components/schemas/rating'
onlinePayment	object	Yes	$ref: '#/components/schemas/yesNoIrrelevant'
responsiveness	object	Yes	$ref: '#/components/schemas/yesNoIrrelevant'
procedureSurvey	object	No	Object holding all the answers for the questions

			related to Online Procedures
complianceEvidence	object	Yes	$ref: '#/components/schemas/yesNoUnknown'
easiness	object	Yes	$ref: '#/components/schemas/rating'
englishAvailability	object	Yes	$ref: '#/components/schemas/yesNoIrrelevant'
nationalAuthentication	object	Yes	$ref: '#/components/schemas/YesNoPartlyIrrelevant'
onlinePayment	object	Yes	$ref: '#/components/schemas/yesNoIrrelevant'
informationSurvey	object	No	Object holding all the answers for the questions related to Information Services
accuracy	object	Yes	$ref: '#/components/schemas/rating'
clarity	object	Yes	$ref: '#/components/schemas/rating'
comprehensiveness	object	Yes	$ref: '#/components/schemas/rating'
easyFinding	object	Yes	$ref: '#/components/schemas/rating'
englishAvailability	object	Yes	$ref: '#/components/schemas/yesNoUnknown'
lastUpdate	object	Yes	$ref: '#/components/schemas/yesNoUnknown'
legalActs	object	Yes	$ref: '#/components/schemas/yesNoIrrelevant'
ownership	object	Yes	$ref: '#/components/schemas/yesNoUnknown'
structure	object	Yes	$ref: '#/components/schemas/rating'
upToDate	object	Yes	$ref: '#/components/schemas/rating'
userFriendliness	object	Yes	$ref: '#/components/schemas/rating'
category	String (enum)	No	Enumeration as "Information", "Procedure", "Assistance"

Response	
Code	Message
200	OK

6. API SECURITY AND AUTHENTICATION
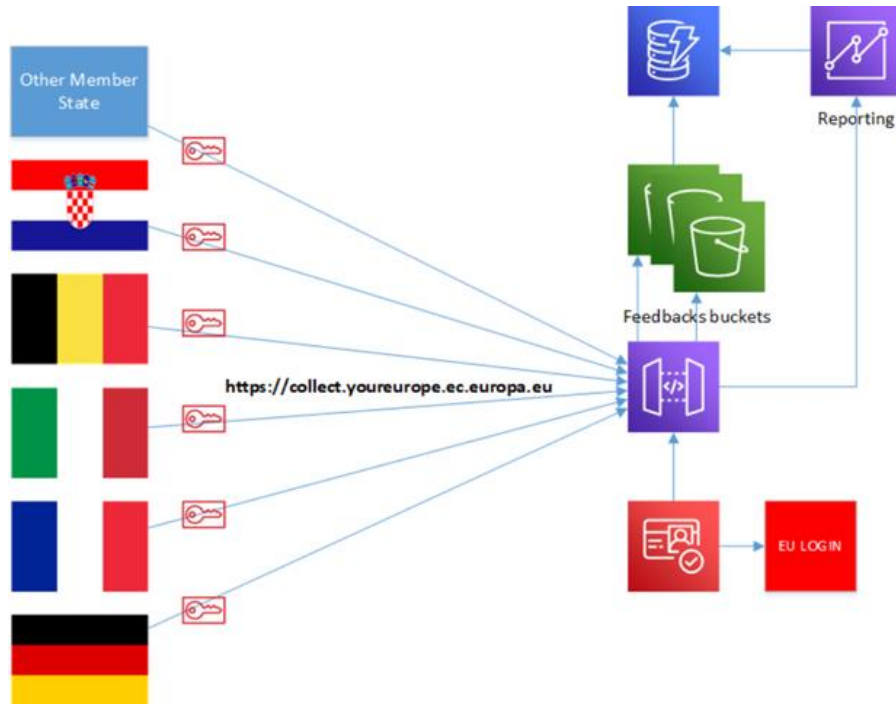
Data collectors, used to push statistical or feedback data towards the common data repository, will be exposed to the EU and Member States level services via a URL. They will be able to collect the data through the API Gateway. Data will be stored in a raw data format in S3 buckets, to allow aggregation and visualisation on the dashboard.

Authentication will be provided via an **API Key method** and a temporary secured API Gateway mechanism (the keys are only valid within a session and then expire), each environment has its own API key defined to use. The key must be passed with each call to the REST API using an http header **x-api-key**.

The management of the keys is ensured by the technical support at the EC.

NB: the URL of the collectors and the modality of distribution of the keys will be communicated once the infrastructure is finalised.

7. APPENDIX 1: UNIQUE ID SWAGGER

unique-id.yml

8. APPENDIX 2: STATISTICS ON INFORMATION SERVICES SWAGGER

statistics-informatio
n.yml

9. APPENDIX 3: STATISTICS ON ASSISTANCE SERVICES SWAGGER

statistics-assistance
.yml

10. APPENDIX 4: FEEDBACK ON QUALITY – 1ST LEVEL SWAGGER

feedback-quality.yml

11. APPENDIX 5: FEEDBACK ON QUALITY – 2ND LEVEL SWAGGER

feedback-quality-surv
ey.yml

12. APPENDIX 6: ASSISTANCE SERVICES – SUBJECT MATTERS

The list will be provided at a later stage once agreed with the relevant services.