



API services Scoring KRD

VERSION 1.5

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1 Service Description

1.1 Versions of the service provided

The KRD Scoring service can be available in two versions:

- **Basic** – as KRD Scoring itself.
- **Extended** – as KRD Scoring extended plus Trade Credit Limit.

1.2 Business description of KRD Scoring

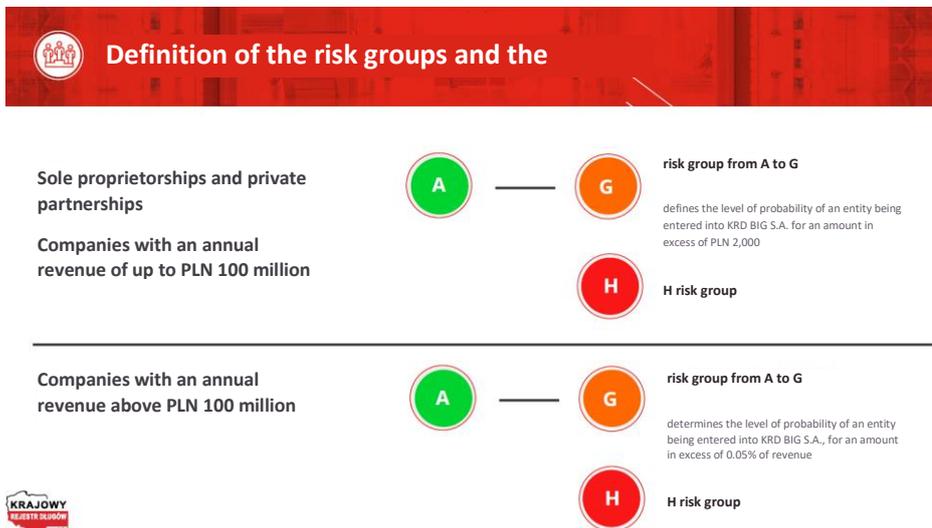
KRD Scoring constitutes an analysis of the payment credibility of an entity that is not a consumer, with a view to assessing the probability that the business entity will be added to KRD BIG S.A. in 6 months' time.

The analysis is performed using machine learning algorithms. Scoring uses unique database resources held by KRD, as well as the National Court Register, the REGON register and the Central Register and Information on Economic Activity.

KRD Scoring querying is available as part of combined services (*via the RiskRadar application, in Report+ and in KRD Extended Report*) and as a standalone service (*API*).

The scoring result is a set of data, including:

- risk group (A-H, X)
- scoring value (0...1)



Model of payment credibility analysis*
DEVELOPED BASED ON AN ANALYSIS OF 1.5 MILLION BUSINESS ENTITIES



1.3 Trade Credit Limit – business description

Trade Credit Limit is an element of the analysis of the creditworthiness of a non-consumer entity, the service of which consists in determining the maximum amount, expressed in PLN, up to which (*based on statistical analysis*) the sale of services or goods with deferred payment to the counterparty is recommended. This limit can be set as a maximum amount for a single order or for all orders in a given period, e.g. a month or a year. The calculation is based on the assumption that the company under review has up to eight suppliers (*the currently accepted value can be found at <https://krd.pl/raport-rozszerzony-limit-kupiecki-w-ramach-analizy-wiarygodnosci-platniczej>*) who provide services or goods for a similar amount and at the same time have an average payment term of 60 days.

In determining the Trade Credit Limit, several hundred pieces of information about the business and its environment are taken into account in the analysis of the payment reliability of the non-consumer business from the following sources:

- CEIDG (the Central Register and Information on Economic Activity)
- REGON (Business ID) register
- KRS (National Court Register) (*including financial statements*)
- KRD BIG S.A.

In order to determine the Trade Credit Limit, the Payment Credibility Category (*resulting from the KRD Scoring calculation*) must also be determined, so if no Payment Credibility Category is determined, no Trade Credit Limit will be determined.

The result of the Trade Credit Limit calculation is a set of data, including, among others:

- Trade Credit Limit value (*in PLN*)
- Trade Credit Limit availability status

The Trade Credit Limit and its availability status can be determined using one of two models:

- a) Trade credit limit set on the basis of data allowing the assessment of the entity's scale of activities and insolvency risk, taking into account data from financial statements (*Model 1*)
- b) Trade credit limit set on the basis of data allowing an assessment of the scope of the company's activities and the risk of insolvency (*Model 2*)

The amount of the Trade Credit Limit is a recommendation and should not be equated with a credit decision.

The determination of the Trade Credit Limit requires the conclusion of an agreement with KRD BIG S.A. for the performance of such analysis.

2 Access addresses to API Scoring KRD

Environment	Address
PRODUCTION	https://solvig-webapi.krd.pl/
DEMONSTRATION	https://demo-solvig-webapi.krd.pl/

3 Online documentation

Environment	Address
PRODUCTION	https://solvig-webapi.krd.pl/documentation/index.html
DEMONSTRATION	https://demo-solvig-webapi.krd.pl/documentation/index.html

The documentation has been drafted in *Swagger UI*.

4 Authentication and authorisation

The full addresses of the methods for obtaining a token in Security.Api:

Environment	Address
PRODUCTION	https://authapi.krd.pl
DEMONSTRATION	https://demo-authapi.krd.pl/

4.1 Obtaining a token

Resource	Method	Description
/api/v1.0/connect/token	POST	Authorisation

The "token" method makes it possible to obtain a token, required to authorise access to our services. In order to receive a token, you need to submit an authorisation request. If the request is handled correctly, a response will be returned with the **200** code. A reference token is returned in response.

In order to be able to use this method, the client application must be registered on the side of KRD, as a result of which the client receives personalised **Client_id** and **Client_secret** values.

In order to retrieve a reference token from **Security.API**, use the **POST /api/v1.0/connect/token** suffix, providing the required client input parameters:

- **Client_id** – external system identifier (*guid*) – to be provided by KRD
- **Client_secret** – external system password (*guid*) – to be provided by KRD
- **Grant_type** – ‘client_credentials’

Sample query:

```
curl -X POST "https://authapi.krd.pl/api/v1.0/connect/token"
-H "accept: application/json"
-H "Content-Type: application/x-www-form-urlencoded"
-d "client_id=xxx&grant_type=client_credentials&client_secret=yyy"
```

Sample response:

```
{
  "access_token": "7D33253870C3039BAA5FE62B12EB5E7D4D9A6BEA84B8383E14E07EE767D10743-1",
  "expires_in": 3600,
  "token_type": "Bearer",
  "refresh_token": null,
  "scope": "KRD"
}
```

Parameter	Importance
access_token	Access token; for integration with an external system, it is a reference token
expires_in	Validity of a token in seconds
token_type	Token type, Bearer in this case
scope	Range of features to which the external system has access. If more than one, the individual ranges are separated by spaces

Possible errors:

Type	Code	Description
Bad request	400	Incorrect request
Unauthorized	401	No authorisation

5 API Scoring KRD methods

All the methods are shown in electronic documentation with a model and examples. The following methods are employed to use the API scoring service:

Methods to download dictionary data for KRD Scoring:

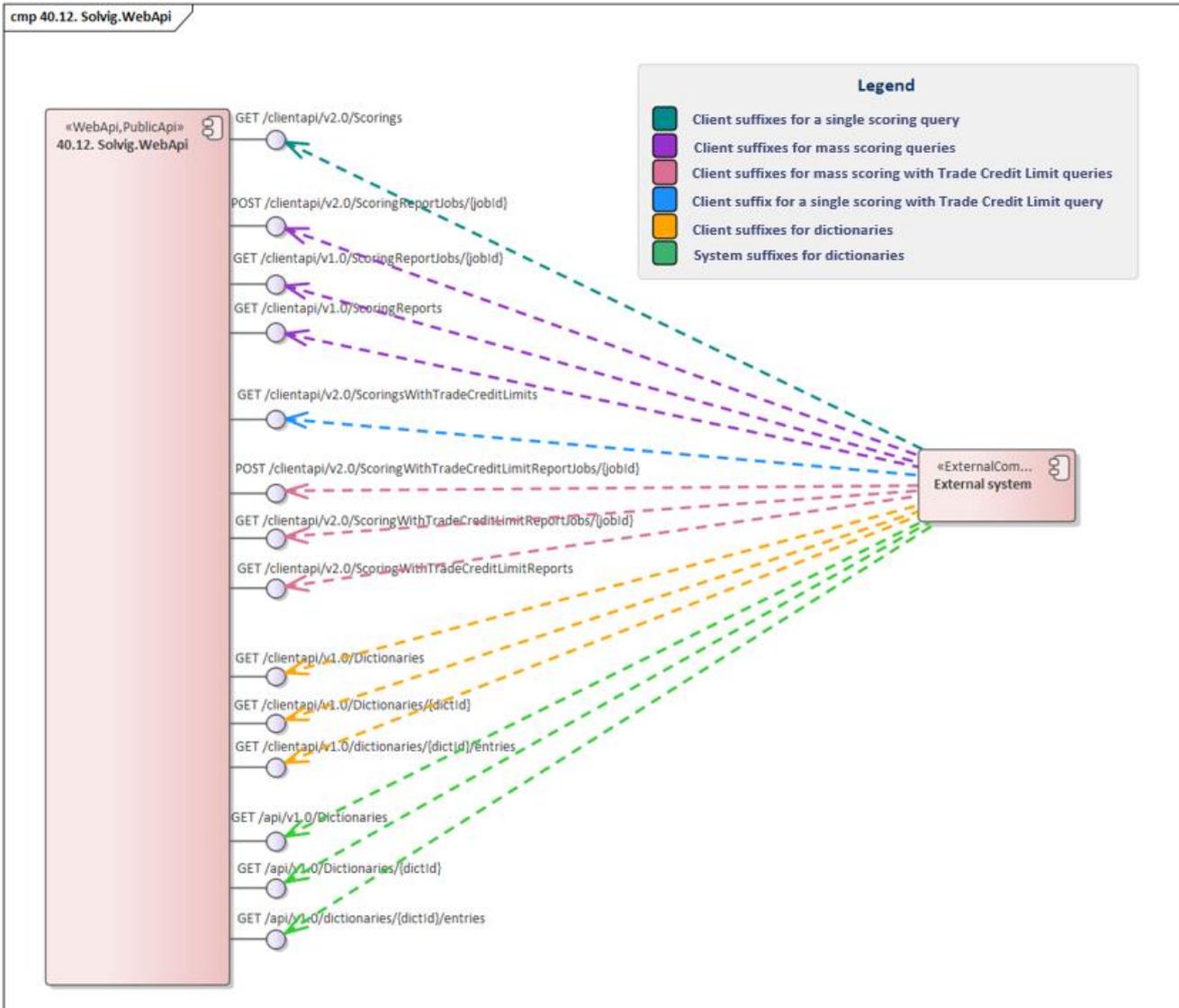
Resource	Method	Description
/api/v1.0/Dictionaries	GET	Retrieving a list of available dictionaries in the system context
/api/v1.0/Dictionaries/{dictId}	GET	Retrieving a dictionary in the system context
/api/v1.0/Dictionaries/{dictId}/entries	GET	Retrieving dictionary values in the system context
/clientapi/v1.0/Dictionaries	GET	Retrieving a list of available dictionaries in the client context
/clientapi/v1.0/Dictionaries/{dictId}	GET	Retrieving a dictionary in the client context
/clientapi/v1.0/Dictionaries/{dictId}/entries	GET	Retrieving dictionary values in the client context

Methods to download KRD Scoring:

Resource	Method	Description
/clientapi/v2.0/Scorings	GET	Retrieving scoring data for one entity in the client context
/clientapi/v2.0/ScoringReportJobs/{jobId}	POST	Tranche scoring query job in the client context
/clientapi/v1.0/ScoringReportJobs/{jobId}	GET	Retrieving the status of a tranche job for a scoring query
/clientapi/v1.0/ScoringReports	GET	Retrieving the result of a tranche request for a scoring query

Methods to download KRD Scoring with Trade Credit Limit:

Resource	Method	Description
/clientapi/v2.0/ScoringsWithTradeCreditLimits	GET	Retrieving scoring data with Trade Credit Limit for an entity in the context of a customer
/clientapi/v2.0/ScoringWithTradeCreditLimitReportJobs/{jobId}	POST	Request for tranche query of scoring data with Trade Credit Limit in customer context
/clientapi/v2.0/ScoringWithTradeCreditLimitReportJobs/{jobId}	GET	Retrieving the status of a tranche query for Scoring with Trade Credit Limit in the customer context.
/clientapi/v2.0/ScoringWithTradeCreditLimitReportJobs/{jobId}	GET	Retrieving the final result of a tranche query for Scoring with Trade Credit Limit in the customer context.



5.1 Dictionary query

5.1.1 Retrieving a list of available dictionaries

The method makes it possible to return a list of all available dictionaries with no entries in the context of a currently logged-in user*¹. No parameters are used in order to obtain a list of dictionaries. If the request is handled correctly, a response will be returned with the **200** code and a list of available dictionaries.

Resource	Method	Description
/clientapi/v1.0/Dictionarys	GET	Retrieving a list of available dictionaries in the client context
/api/v1.0/Dictionarys	GET	Retrieving a list of available dictionaries in the system context

¹ * Authorisation for dictionary system suffixes takes place by entering the JWT system token.

Sample query:

```
curl -X 'GET' \
'https://solvig-webapi.krd.pl/clientapi/v1.0/Dictionaryes' \
-H 'accept: application/json' \
-H 'Authorization: Bearer 7D33253870C3039BAA5FE62B12EB5E7D4D9A6BEA84B8383E14E07EE767D10743-1'
```

Sample response:

```
{
  "dictionaries": [
    {
      "id": 1,
      "dictionaryName": "Dictionary of scoring statuses (reasons for absence)",
      "entriesLink": "clientapi/Dictionaryes/1/Entries"
    },
    {
      "id": 2,
      "dictionaryName": "Dictionary of risk group descriptions",
      "entriesLink": "clientapi/Dictionaryes/2/Entries"
    },
    {
      "id": 3,
      "dictionaryName": "Parameters for a business rule",
      "entriesLink": "clientapi/Dictionaryes/3/Entries"
    }
  ]
}
```

Possible errors:

Type	Code	Description
Unauthorized error	401	Unauthorized error
Forbidden	403	Forbidden
Too many requests in a set of time frame	429	Too many requests in a set of time frame
Unexpected error occurred	500	Unexpected error occurred

NOTE! The list of available dictionaries and their individual values are subject to change and the customer will be notified of any such change. Current dictionary values are available in the electronic API documentation.

5.1.2 Retrieving a dictionary

The method makes it possible to display the name of a dictionary with a specific identifier with no entries in the context of the user currently logged in^{*2}. If the request is handled correctly, a response will be returned with the **200** code, with the identifier, name and address to retrieve the scoring values of a selected dictionary.

Resource	Method	Description
/clientapi/v1.0/Dictionaryes/{dictId}	GET	Retrieving a dictionary in the client context
/api/v1.0/Dictionaryes/{dictId}	GET	Retrieving a dictionary in the system context

² * Authorisation for dictionary system suffixes takes place by entering the JWT system token.

To retrieve information about a selected dictionary, use the `GET /clientapi/v1.0/Dictionaryes/{dictId}` suffix, specifying the required input client parameter:

- `dictId` – dictionary identifier

Sample query:

```
curl -X 'GET' \
  'https://solvig-webapi.krd.pl/clientapi/v1.0/Dictionaryes/1' \
  -H 'accept: application/json' \
  -H 'Authorization: Bearer 7D33253870C3039BAA5FE62B12EB5E7D4D9A6BEA84B8383E14E07EE767D10743-1'
```

Sample response:

```
{
  "id": 1,
  "dictionaryName": "Dictionary of scoring statuses (reasons for absence)",
  "entriesLink": "clientapi/Dictionaryes/1/Entries"
}
```

Possible errors:

Type	Code	Description
Unauthorized error	401	Unauthorized error
Forbidden	403	Forbidden
Dictionary does not exist in context of currently logged in user	404	Dictionary does not exist in context of currently logged in user
Too many requests in a set of time frame	429	Too many requests in a set of time frame
Unexpected error occurred	500	Unexpected error occurred

5.1.3 Retrieving dictionary values

The method makes it possible to display the value of a dictionary with a specific identifier in the context of the user currently logged in³. If the request is handled correctly, a response will be returned with the **200** code and the scoring values of the selected dictionary.

Resource	Method	Description
<code>/clientapi/v1.0/dictionaries/{dictId}/entries</code>	GET	Retrieving dictionary values in the client context
<code>/api/v1.0/dictionaries/{dictId}/entries</code>	GET	Retrieving dictionary values in the system context

To retrieve information about a selected dictionary, use the `GET /clientapi/v1.0/Dictionaryes/{dictId}/entries` suffix, specifying the required input parameter:

- `dictId` – dictionary identifier

³ * Authorisation for dictionary system suffixes takes place by entering the JWT system token.

Sample query:

```
curl -X 'GET' \  
'https://solvig-webapi.krd.pl/clientapi/v1.0/dictionaries/1/entries' \  
-H 'accept: application/json' \  
-H 'Authorization: Bearer 7D33253870C3039BAA5FE62B12EB5E7D4D9A6BEA84B8383E14E07EE767D10743-1'
```

Sample response 1 (*dictionary of scoring statuses*):

```
{  
  "dictionaryLink": "clientapi/Dictionaries/1",  
  "entries": [  
    {  
      "entryCode": "0",  
      "entryValue": "The analysis result is available"  
    },  
    {  
      "entryCode": "1",  
      "entryValue": "Insufficient data"  
    },  
    {  
      "entryCode": "2",  
      "entryValue": "Deleted from the register (source: CEIDG)"  
    },  
    {  
      "entryCode": "3",  
      "entryValue": "Deleted from the register (source: National Court Register)"  
    },  
    {  
      "entryCode": "4",  
      "entryValue": "It ceased to perform business operations (source: REGON (BUSINESS ID))"  
    },  
    {  
      "entryCode": "5",  
      "entryValue": "In liquidation (source: National Court Register)"  
    },  
    {  
      "entryCode": "6",  
      "entryValue": "Incorrect TIN (it does not result in the checksum for the validation of the Polish TIN)"  
    },  
    {  
      "entryCode": "7",  
      "entryValue": "Insufficient data"  
    },  
    {  
      "entryCode": "8",  
      "entryValue": "Internal processing error"  
    },  
    {  
      "entryCode": "9",  
      "entryValue": "Active in liquidation (source: National Court Register)"  
    },  
    {  
      "entryCode": "10",  
      "entryValue": "Active in business failure (source: National Court Register)"  
    },  
    {  
      "entryCode": "11",  
      "entryValue": "Suspended in liquidation (source: National Court Register)"  
    }  
  ]  
}
```

```
    },  
    {  
      "entryCode": "12",  
      "entryValue": "Suspended in business failure (source: National Court Register)"  
    }  
  ]  
}
```

For the **Dictionary of scoring statuses**, the **entryCode** parameter has values for which:

- "entryCode": 0 – indicates that the analysis result exists
- "entryCode": 1-12 – indicates the reason for the lack of scoring

For methods related to single and tranche scoring queries, this value is returned in the form of the **scoringStatusId** parameter.

Sample response 2 (dictionary of risk group descriptions):

```
{  
  "dictionaryLink": "clientapi/Dictionaries/2",  
  "entries": [  
    {  
      "entryCode": "A",  
      "entryValue": "Highest rating"  
    },  
    {  
      "entryCode": "B",  
      "entryValue": "Very high rating "  
    },  
    {  
      "entryCode": "C",  
      "entryValue": "High rating "  
    },  
    {  
      "entryCode": "D",  
      "entryValue": "Average rating"  
    },  
    {  
      "entryCode": "E",  
      "entryValue": "Low rating"  
    },  
    {  
      "entryCode": "F",  
      "entryValue": "Very low rating"  
    },  
    {  
      "entryCode": "G",  
      "entryValue": "Lowest rating"  
    },  
    {  
      "entryCode": "H",  
      "entryValue": "Significant debt in the KRD BIG S.A. system."  
    },  
    {  
      "entryCode": "X",  
      "entryValue": "Absence of the analysis result"  
    }  
  ]  
}
```

For the **Dictionary of risk group descriptions**, the **entryCode** parameter has nine values now for which:

- "entryCode": **A-G** – indicates whether the rating is low or high
- "entryCode": **H** – means a significant debt in the KRD
- "entryCode": **X** – means no analysis result

For methods related to single and tranche scoring queries, this value is returned in the form of the **riskGroup** parameter.

Sample response 3 (parameters for a business rule):

```
{
  "dictionaryLink": "clientapi/Dictionaries/3",
  "entries": [
    {
      "entryCode": "DebtThreshold",
      "entryValue": "2000"
    },
    {
      "entryCode": "IncomeThreshold",
      "entryValue": "100000000"
    },
    {
      "entryCode": "PercentageIncome",
      "entryValue": "0.0005"
    }
  ]
}
```

For **Parameters for a business rule**, the **entryCode** parameter has three condition values, used for calculating the scoring value:

- "entryCode": **DebtThreshold** – defines the minimum value of debt in KRD, considered where no information is available on annual revenue or where annual revenue is less than the **IncomeThreshold** value
- "entryCode": **IncomeThreshold** – specifies the amount of annual revenue
- "entryCode": **PercentageIncome** – specifies the percentage of annual revenue

Possible errors:

Type	Code	Description
Unauthorized error	401	Unauthorized error
Forbidden	403	Forbidden
Dictionary does not exist in context of currently logged in user	404	Dictionary does not exist in context of currently logged in user
Too many requests in a set of time frame	429	Too many requests in a set of time frame
Unexpected error occurred	500	Unexpected error occurred

5.2 Single scoring query

5.2.1 Retrieving scoring data

The method makes it possible to retrieve the scoring values for a single entity in the context of the user currently logged in. If the request is handled correctly, a response will be returned with the **200** code and scoring values.

Resource	Method	Description
/clientapi/v2.0/Scorings	GET	Retrieving scoring data

For a scoring query for a single entity (*TIN*), use the **GET /clientapi/v2.0/Scorings** client suffix, providing the required input parameters:

- **TaxId** – tax identification number (*TIP*) of the entity being verified
- **TaxIdType** type of tax identifier (**1** – European/Polish TIN, **0** – other)

As an input parameter, the tax identification number (*TIN*) undergoes further normalisation and validation. The Client provides a non-standardised tax identification number and receives the same in response. Scoring is only calculated for correct Polish VAT numbers. For foreign or incorrect TINs, **scoringStatusId=6** – Incorrect TIN (*it does not result in the checksum for the validation of the Polish TIN*) will be returned.

Sample tax identification number (*TIN*) formats:

- 10 digits
- PL 10 digits
- PL 10 digits
- PL-10 digits
- the sign „-“ between the digits (XXX-XXX-XX-XX)

The **TaxIdType** parameter should have a default value of **1**. When **0** is specified, the TIN to be checked is treated as unsupported and the query will return **scoringStatusId=6**.

The **ReportNumber** parameter, related to a KRD report number (*generated in advance when retrieving business information as part of a combined service*), is an optional parameter in API and **should be left blank** when a query is made an external client.

The calculation of the scoring involves the retrieval of information on the current debt in KRD, which is required to categorise an entity in risk group H. However, querying about the current debt in KRD does not take place in the following cases:

- verified TIN is foreign – **scoringStatusId=6** (*Incorrect TIN*)
- verified tax identification number is Polish but not correct – **scoringStatusId=6** (*Incorrect TIN*)
- after preliminary analysis, risk group X has been assigned – **riskGroup=X** (*Insufficient data*)

Sample query:

```
curl -X 'GET' \
'https://solvig-webapi.krd.pl/clientapi/v2.0/Scorings?TaxId=000000005&TaxIdType=1' \
-H 'accept: application/json' \
-H 'Authorization: Bearer 7D33253870C3039BAA5FE62B12EB5E7D4D9A6BEA84B8383E14E07EE767D10743-1'
```

Sample response:

```
{
  "scorings": [
    {
      "taxId": "0000000056",
      "scoringValue": "0.14435712993145",
      "riskGroup": "A",
      "scoringStatusId": 0,
      "calculatedAt": "2023-01-04T00:00:00"
    }
  ]
}
```

5.2.2 Query result and possible errors

Output query parameters:

Parameter	Importance
taxId	Tax identification number provided by the Client; not standardised
scoringValue	Scoring value from 0 to 1, with accuracy to 16 decimal places The value determines the probability of a business entity being added to the KRD within 6 months' time for an amount of at least: a) PercentageIncome – % of annual revenue where the business entity generates annual revenue of at least IncomeThreshold b) DebtThreshold – otherwise (no information on annual revenue or annual revenue is less than IncomeThreshold) Parameter values defined in the <i>“Parameters for a business rule”</i> [dictId=3]
riskGroup	Risk group, dictionary value based on <i>Dictionary of risk group descriptions</i> [dictId=2]
scoringStatusId	Scoring status, dictionary value based on <i>Dictionary of scoring statuses (reasons for absence)</i> [dictId=1]
calculatedAt	Scoring recalculation date

Possible errors:

Type	Code	Description
Bad request	400	Bad request
Unauthorized error	401	Unauthorized error
Forbidden	403	Forbidden
Too many requests in a set of time frame	429	Too many requests in a set of time frame
Unexpected error occurred	500	Unexpected error occurred

5.3 Mass scoring query

A query about multiple entities at a time is executed as a job with a unique identifier (*guid*) requiring further processing. The entire process is performed asynchronously in the following steps:

1. Scoring query job
2. Checking job status
3. Retrieving the result of a query job

Resource	Method	Description
/clientapi/v2.0/ScoringReportJobs/{jobId}	POST	Tranche scoring query job
/clientapi/v1.0/ScoringReportJobs/{jobId}	GET	Retrieving the status of a tranche job for a scoring query
/clientapi/v1.0/ScoringReports	GET	Retrieving the result of a tranche request for a scoring query

5.3.1 Tranche scoring query job

The method makes it possible to create a scoring query job for multiple entities in the context of a logged-in user. If the request is handled correctly, a response will be returned with the **202** code.

To create a *scoring* query job for multiple entities, use the **POST /clientapi/v2.0/ScoringReportJobs/{jobId}** method, specifying the required input parameters:

- **jobId** – the unique identifier (*guid*) of a scoring query, generated by the client
- Query content in json format:
 - **TaxId** – tax identification number (*TIN*) of the entity being verified
 - **TaxIdType** – type of tax identifier (**1** – European/Polish TIN, **0** – other)

The value of **jobId** as the identifier of a given scoring query should be generated by the client. This identifier will be required for the purpose of retrieving the result and checking the query status.

The body of a query contains the data of the entities for which the scoring is due to be calculated. Mass queries are subject to limit of **a maximum of 1,000 TINs in a tranche package**.

As an input parameter, the tax identification number (*TIN*) undergoes further normalisation and validation. The Client provides a non-standardised tax identification number and receives the same in response. Scoring is only calculated for **correct Polish VAT numbers**.

For foreign or incorrect TINs, **scoringStatusId=6** – Incorrect TIN (*it does not result in the checksum for the validation of the Polish TIN*) will be returned.

The **TaxIdType** parameter should have a default value of **1**. When **0** is specified, the TIN to be checked is treated as unsupported and the query will return **scoringStatusId=6**.

The **ReportNumber** parameter, related to a KRD report number (*generated in advance when retrieving business information as part of a combined service*), is an optional value to be provided in the content of the query and **should be left blank** when a query is made an external client.

The calculation of the scoring involves the retrieval of information on the current debt in KRD, which is required to categorise an entity in risk group H. However, querying about the current debt in KRD does not take place in the following cases:

- verified TIN is foreign – **scoringStatusId=6** (*Incorrect TIN*)
- verified tax identification number is Polish but not correct – **scoringStatusId=6** (*Incorrect TIN*)
- after preliminary analysis, risk group X has been assigned – **riskGroup=X** (*Insufficient data*)

Sample query:

```
curl -X 'POST' \  
  'https://solvig-webapi.krd.pl/clientapi/v2.0/ScoringReportJobs/3ca91347-9b24-4131-9347-  
e6fd86280917' \  
  -H 'accept: application/json' \  
  -H 'Authorization: bearer 07E6FBD41CDF6E6E6975C84795656A60495EA340801E1B90D3DAE325D9CF5574-1' \  
  -H 'Content-Type: application/json' \  
  -d '{  
  "scoringRequests": [  
    {  
      "taxId": "1258147922",  
      "taxIdType": 1  
    },  
    {  
      "taxId": "3370534652",  
      "taxIdType": 1  
    },  
    {  
      "taxId": "5342618964",  
      "taxIdType": 1  
    },  
    {  
      "taxId": "1248309702",  
      "taxIdType": 1  
    },  
    {  
      "taxId": "1129844961",  
      "taxIdType": 1  
    },  
    {  
      "taxId": "1111562457",  
      "taxIdType": 1  
    },  
    {  
      "taxId": "5299716589",  
      "taxIdType": 1  
    },  
    {  
      "taxId": "5113832130",  
      "taxIdType": 1  
    }  
  ]  
}'
```

Possible errors:

Type	Code	Description
One or more validation errors occurred	400	Validation error. Possible causes of incorrect validation: <ul style="list-style-type: none"> incorrect value of the "TaxId" parameter the number of TINs in a tranche package has been exceeded
Unauthorized error	401	Unauthorized error
Forbidden	403	Forbidden
Too many requests in a set of time frame	429	Too many requests in a set of time frame
Unexpected error occurred	500	Unexpected error occurred

5.3.2 Retrieving the status of a tranche job for a scoring query

The method makes it possible to check the current processing status of a given scoring job for multiple entities in the context of a logged-in user. In order to retrieve the current status of a query job, use the GET `/clientapi/v1.0/ScoringReportJobs/{jobId}` method, specifying the required input parameter:

- jobId** – the unique identifier (*guid*) of a scoring query, generated by the client while requesting a scoring query

Sample query:

```
curl -X 'GET' \
  'https://solvig-webapi.krd.pl/clientapi/v2.0/ScoringReportJobs/3ca91347-9b24-4131-9347-e6fd86280917' \
  -H 'accept: application/json' \
  -H 'Authorization: bearer 07E6FBD41CDF6E6E6975C84795656A60495EA340801E1B90D3DAE325D9CF5574-1' \
```

If the request is handled correctly, one of the responses will be returned:

Type	Code	Description
Request has succeeded. Job with provided id was found but is not finished yet.	200	Request has succeeded. Job with provided id was found but is not finished yet. Possible job statuses: 0 – created 1 – in progress 3 – failed
Job is complete and the status endpoint returns 302 (Found) redirecting to resource	302	Job processing complete. Job status: 2 – Completed This case involves an automatic redirection to the method retrieving the scoring.

As a result of automatic redirection, the 302 code will be only an interim result, and the redirection result, i.e. the result of the GET `/clientapi/v1.0/ScoringReports` (200) method, will be returned in the end.

Possible errors:

Type	Code	Description
Bad request	400	Bad request
Unauthorized error	401	Unauthorized error
Forbidden	403	Forbidden
Job does not exist	404	Job does not exist
Too many requests in a set of time frame	429	Too many requests in a set of time frame
Unexpected error occurred	500	Unexpected error occurred

5.3.3 Retrieving the result of a tranche request for a scoring query

The method makes it possible to retrieve the result of a scoring query for multiple entities in the context of a logged-in user. If the request is handled correctly, a response will be returned with the **200** code.

The method is called automatically following redirection when checking the status of a processed job, provided that the **GET /clientapi/v1.0/ScoringReportJobs/{jobId}** method is used.

To retrieve the result of a tranche scoring query on your own, use the **GET /clientapi/v1.0/ScoringReports** method, specifying the required input parameter:

- **jobId** – the unique identifier (*guid*) of a scoring query, generated by the client while requesting a scoring query

Output query parameters:

Parameter	Importance
jobId	Scoring query job identified provided by the client
jobStatus	Status of scoring query job processing Possible values: 0 – Created 1 – InProgress 2 – Completed 3 – Failed
scoringReport	The scoring result for the requested tranche as a node, made up of the following output parameters.
taxId	Tax identification number provided by the Client; not standardised
scoringValue	Scoring value from 0 to 1, with accuracy to 16 decimal places The value determines the probability of a business entity being added to the KRD within 6 months' time for an amount of at least: a) PercentageIncome – % of annual revenue where the business entity generates annual revenue of at least IncomeThreshold b) DebtThreshold – otherwise (no information on annual revenue or annual revenue is less than IncomeThreshold) Parameter values defined in the <i>"Parameters for a business rule"</i> [dictId=3]
riskGroup	Risk group, dictionary value based on <i>Dictionary of risk group descriptions</i> [dictId=2]
scoringStatusId	Scoring status, dictionary value based on <i>Dictionary of scoring statuses (reasons for absence)</i> [dictId=1]
calculatedAt	Scoring recalculation date

Sample response:

```
{
  "jobId": "3ca91347-9b24-4131-9347-e6fd86280917",
  "jobStatus": 2,
  "scoringReport": [
    {
      "taxId": "1258147922",
      "scoringValue": null,
      "riskGroup": "H",
      "scoringStatusId": 0,
      "calculatedAt": "2023-02-01T00:00:00"
    },
    {
      "taxId": "3370534652",
      "scoringValue": null,
      "riskGroup": "H",
      "scoringStatusId": 0,
      "calculatedAt": "2023-02-01T00:00:00"
    },
    {
      "taxId": "5342618964",
      "scoringValue": null,
      "riskGroup": "H",
      "scoringStatusId": 0,
      "calculatedAt": "2023-02-01T00:00:00"
    },
    {
      "taxId": "1248309702",
      "scoringValue": null,
      "riskGroup": "H",
      "scoringStatusId": 0,
      "calculatedAt": "2023-02-01T00:00:00"
    },
    {
      "taxId": "1129844961",
      "scoringValue": null,
      "riskGroup": "H",
      "scoringStatusId": 0,
      "calculatedAt": "2023-02-01T00:00:00"
    },
    {
      "taxId": "1111562457",
      "scoringValue": null,
      "riskGroup": "X",
      "scoringStatusId": 7,
      "calculatedAt": "2023-02-01T00:00:00"
    },
    {
      "taxId": "5299716589",
      "scoringValue": "0,010177781",
      "riskGroup": "A",
      "scoringStatusId": 0,
      "calculatedAt": "2023-02-01T00:00:00"
    },
    {
      "taxId": "5113832130",
      "scoringValue": "0,012742",
      "riskGroup": "B",
      "scoringStatusId": 0,
      "calculatedAt": "2023-02-01T00:00:00"
    }
  ]
}]}
```

Possible errors:

Type	Code	Description
Bad request	400	Bad request
Unauthorized error	401	Unauthorized error
Forbidden	403	Forbidden
Too many requests in a set of time frame	429	Too many requests in a set of time frame
Unexpected error occurred	500	Unexpected error occurred

5.4 Single Scoring query with Trade Credit Limit

5.4.1 Retrieval of scoring data with Trade Credit Limit

The method allows scoring values to be retrieved along with trade credit limit values for a single entity in the context of the currently logged in user. If the request is handled correctly, a response with code **200** and the set of scoring and Trade Credit Limit data will be returned.

Resource	Method	Description
/clientapi/v2.0/ScoringsWithTradeCreditLimits	GET	Retrieving scoring data with Trade Credit Limit for an entity in the context of a customer

To query Scoring with Trade Credit Limit for a single entity (*TIN*), use the GET client stub `/clientapi/v2.0/ScoringsWithTradeCreditLimits` with the required input parameters:

- **TaxId** – tax identification number (*TIN*) of the entity being verified
- **TaxIdType** – type of tax identifier (**1** – European/Polish TIN, **0** – other)

As an input parameter, the tax identification number (*TIN*) undergoes further normalisation and validation. The Client provides a non-standardised tax identification number and receives the same in response. Scoring and Trade Credit Limit are calculated only **for valid Polish TIN numbers**. For foreign or invalid TINs, a value of 6 is returned for **scoringStatusId** and **status (tradeCreditLimit)** – Incorrect TIN (*does not meet the checksum for validation of the Polish TIN number*).

Sample tax identification number (*TIN*) formats:

- 10 digits
- PL10 digits
- PL 10 digits
- PL-10 digits
- the sign „-“ between the digits (XXX-XXX-XX-XX)

The **TaxIdType** parameter should have a default value of **1**. If a value of **0** is provided, the TIN to be checked will be treated as unsupported and the query will return a value of 6 for **scoringStatusId** and **status (tradeCreditLimit)**.

The **ReportNumber** parameter, which refers to the KRD BIG S.A. report number (*generated in advance when retrieving business information as part of a combined service*), is an optional parameter in the API and **should be left blank** when queried by an external client.

The calculation of Scoring with Trade Credit Limit includes the retrieval of information on current debts in KRD BIG S.A., which is necessary to qualify the entity for risk group H. However, the retrieval of current debts in KRD BIG S.A. is not performed in the following cases:

- the verified TIN is foreign – **scoringStatusId=6** and **status (tradeCreditLimit)=6** (*Incorrect TIN*)
- the verified TIN is Polish, but not valid – **scoringStatusId=6** and **status (tradeCreditLimit)=6** (*Incorrect TIN*)
- insufficient data on the entity – **scoringStatusId=7** and **status (tradeCreditLimit)=7** (*Insufficient data*)

Sample query:

```
curl -X 'GET' \  
  'https://solvig-  
webapi.krd.pl/clientapi/v2.0/ScoringsWithTradeCreditLimits?TaxId=000000005&TaxIdType=1' \  
  -H 'accept: application/json' \  
  -H 'Authorization: Bearer 7D33253870C3039BAA5FE62B12EB5E7D4D9A6BEA84B8383E14E07EE767D10743-1'
```

Sample response:

```
{  
  "scoringsWithTradeCreditLimits": [  
    {  
      "scoring": {  
        "scoringValue": "0.14435712993145",  
        "riskGroup": "A",  
        "scoringStatusId": 0  
      },  
      "tradeCreditLimit": {  
        "modelType": 1,  
        "status": 100,  
        "value": 82732  
      },  
      "calculatedAt": "2023-01-01T00:00:00"  
    }  
  ]  
}
```

5.4.2 Query result and possible errors

Output query parameters:

Parameter	Importance
scoringsWithTradeCreditLimits	Node header containing a set of query results consisting of the queried TIN, Scoring and Trade Credit Limit result.
calculatedAt	Scoring and Trade Credit Limit recalculation date
scoring	Node header with Scoring data
scoringValue	Scoring value from 0 to 1, with accuracy to 16 decimal places The value determines the probability of a business entity being added to the KRD BIG S.A. within 6 months' time for an amount of at least: a) PercentageIncome – % of annual revenue where the business entity generates annual revenue of at least IncomeThreshold b) DebtThreshold – otherwise (no information on annual revenue or annual revenue is less than IncomeThreshold) Parameter values defined in the “ <i>Parameters for a business rule</i> ” [dictId=3]
riskGroup	Risk group, dictionary value based on <i>Dictionary of risk group descriptions</i> [dictId=2]
scoringStatusId	Scoring status, dictionary value based on <i>Dictionary of Scoring statuses (reasons for absence)</i> [dictId=1]
tradeCreditLimit	Node header with Trade Credit Limit data
modelType	Type of model used to calculate the Trade Credit Limit Possible values: NULL (with no Trade Credit Limit specified) 1 = M1 2 = M2
status	Trade Credit Limit availability status Possible values*: 6 = Wrong NIP (tax id. no.) 7 = Insufficient data 8 = Internal processing error 72 = Insufficient data (inconsistent balance sheet totals) 73 = Insufficient data (reportedly compromised equity) 74 = Insufficient data (no or very low turnover indicating no economic activity) 75 = Entity not registered with CEDIG or KRS 76 = Business closed (source: REGON register) 100 = Specified Limit (no financial statement alerts) 101 = Specified Limit (occurrence of one of the alerts: weak liquidity/high loss/balance sheet structure - usually related to the level of debt in relation to equity or total assets) 102 = Insufficient data (outdated financial statements or lack of basic data making it impossible to determine the payment reliability category) 701 = Active in liquidation (source: National Court Register) 702 = Active in restructuring (source: National Court Register) 703 = Active in business failure (source: National Court Register) 704 = Suspended in liquidation (source: National Court Register) 705 = Suspended in restructuring (source: National Court Register) 706 = Suspended in business failure (source: National Court Register) 707 = ceased to perform business operations (source: REGON register) 708 = Suspended (source: the Central Register and Information on Economic Activity)

	709 = Suspended (source: National Court Register) 712 = Deleted from the register (source: the Central Register and Information on Economic Activity) 713 = Deleted from the register (source: National Court Register) 714 = Business suspended (source: the Central Register and Information on Economic Activity) 715 = In liquidation (source: National Court Register) 716 = In restructuring (source: National Court Register) 717 = Business suspended (source: National Court Register) 9999 = Algorithm error *Active dictionary available in the electronic documentation of the API (swagger)
value	Value of available Trade Credit Limit in PLN

Possible errors:

Type	Code	Description
Bad request	400	Bad request
Unauthorized error	401	Unauthorized error
Forbidden	403	Forbidden
Too many requests in a set of time frame	429	Too many requests in a set of time frame
Unexpected error occurred	500	Unexpected error occurred

5.5 Mass Scoring query with Trade Credit Limit

Querying multiple entities at the same time for Scoring with Trade Credit Limit is done as a job with a unique identifier (*guid*) that requires further processing. The whole process, similar to the Scoring request itself, is asynchronous in the following steps:

1. Scoring with Trade Credit Limit query request
2. Checking the status of a Scoring with Trade Credit Limit query request
3. Retrieving the result of a Scoring with Trade Credit Limit query request

Resource	Method	Description
/clientapi/v2.0/ScoringWithTradeCreditLimitReportJobs/{jobId}	POST	Request for tranche query of scoring data with Trade Credit Limit in customer context
/clientapi/v2.0/ScoringWithTradeCreditLimitReportJobs/{jobId}	GET	Retrieving the status of a tranche query for Scoring with Trade Credit Limit
/clientapi/v2.0/ScoringWithTradeCreditLimitReportJobs/{jobId}	GET	Retrieving the final result of a tranced query for Scoring with Trade Credit Limit

5.5.1 Requesting a tranche query for Scoring with Trade Credit Limit

The method allows the creation of a scoring query job with a Trade Credit Limit for multiple entities in the context of a logged-in user. If the request is handled correctly, a response will be returned with the **202** code.

To create a Scoring with Trade Credit Limit query job for multiple entities, use the `POST /clientapi/v2.0/ScoringWithTradeCreditLimitReportJobs/{jobId}` method, specifying the required input parameters:

- **jobId** – the unique identifier (*guid*) of a Scoring with Trade Credit Limit query generated by the client
- Query content in json format:
 - **TaxId** – tax identification number (*TIN*) of the entity being verified
 - **TaxIdType** – type of tax identifier (**1** – *European/Polish TIN*, **0** – *other*)

The value of **jobId** as the identifier of a particular Scoring with Trade Credit Limit query should be generated by the customer. This identifier will be required for the purpose of retrieving the result and checking the query status.

The body of a query contains the data of the entities for which the Scoring is due to be calculated. Mass queries are subject to limit of **a maximum of 1000 TINs in a tranche package.**

As an input parameter, the tax identification number (*TIN*) undergoes further normalisation and validation. The Client provides a non-standardised tax identification number and receives the same in response. Scoring and Trade Credit Limit are calculated only **for valid Polish TIN numbers.**

For foreign or invalid TINs, a value of 6 is returned for **scoringStatusId** and **status (tradeCreditLimit)** – *Incorrect TIN (does not meet the checksum for validation of the Polish TIN number).*

The **TaxIdType** parameter should have a default value of **1**. If a value of **0** is provided, the TIN to be checked will be treated as unsupported and the query will return a value of 6 for **scoringStatusId** and **status (tradeCreditLimit)**.

The **ReportNumber** parameter, related to a KRD BIG S.A. report number (*generated in advance when retrieving business information as part of a combined service*), is an optional value to be provided in the content of the query and **should be left blank** when a query is made an external client.

The calculation of Scoring with Trade Credit Limit includes the retrieval of information on current debts in KRD BIG S.A., which is necessary to qualify the entity for risk group H. However, the retrieval of current debts in KRD BIG S.A. is not performed in the following cases:

- the verified TIN is foreign – **scoringStatusId=6** and **status (tradeCreditLimit)=6** (*Incorrect TIN*)
- the verified TIN is Polish, but not valid – **scoringStatusId=6** and **status (tradeCreditLimit)=6** (*Incorrect TIN*)
- insufficient data on the entity – **scoringStatusId=7** and **status (tradeCreditLimit)=7** (*Insufficient data*)

Sample query:

```
curl -X 'POST' \
  'https://solvig-webapi.krd.pl/clientapi/v2.0/ScoringWithTradeCreditLimitReportJobs/3ca91347-9b24-4131-9347-e6fd86280916' \
  -H 'accept: text/plain' \
  -H 'Content-Type: application/json' \
  -d '{
    "scoringWithTradeCreditLimitRequests": [
      {
        "taxId": "1258147922",
        "taxIdType": 1
      },
      {
        "taxId": "3370534652",
        "taxIdType": 1
      },
      {
        "taxId": "5342618964",
        "taxIdType": 1
      }
    ]
  }'
```

Possible errors:

Type	Code	Description
One or more validation errors occurred	400	Validation error Possible causes of incorrect validation: <ul style="list-style-type: none"> incorrect value of the „TaxId” parameter the number of TINs in a tranche package has been exceeded
Unauthorized error	401	Unauthorized error
Forbidden	403	Forbidden
Too many requests in a set of time frame	429	Too many requests in a set of time frame
Unexpected error occurred	500	Unexpected error occurred

5.5.2 Retrieving the status of a tranche query for Scoring with Trade Credit Limit

The method allows checking the current processing status of a given Scoring with Trade Credit Limit query job for multiple entities in the context of a logged-in user.

To retrieve the current status of a query job, use the `GET /clientapi/v2.0/ScoringWithTradeCreditLimitReportJobs/{jobId}` method, specifying the required input parameter:

- jobId** – the unique (*guid*) of a Scoring with Trade Credit Limit query, generated by the client while requesting a scoring query

Sample query:

```
curl -X 'GET' \
  'https://solvig-webapi.krd.pl/clientapi/v2.0/ScoringWithTradeCreditLimitReportJobs/3ca91347-9b24-4131-9347-e6fd86280916' \
  -H 'accept: text/plain'
```

If the request is handled correctly, one of the responses will be returned:

Type	Code	Description
Request has succeeded. Job with provided id was found but is not finished yet.	200	Request has succeeded. Job with provided id was found but is not finished yet Possible job statuses: 0 – created 1 – in progress 3 – failed
Job is complete and the status endpoint returns 302 (Found) redirecting to resource	302	Job processing complete. Job status: 2 – Completed In this case, an automatic redirection to the method that retrieves the Scoring with Trade Credit Limit result is performed

Due to the automatic redirection, the 302 code will only be a temporary result and will eventually return the result of the redirection, i.e. the result of the GET /clientapi/v2.0/ScoringWithTradeCreditLimitReports (200) method.

Possible errors:

Type	Code	Description
Bad request	400	Bad request
Unauthorized error	401	Unauthorized error
Forbidden	403	Forbidden
Job does not exist	404	Job does not exist
Too many requests in a set of time frame	429	Too many requests in a set of time frame
Unexpected error occurred	500	Unexpected error occurred

5.5.3 Retrieving the final result of a tranced query for Scoring with Trade Credit Limit

The method allows to retrieve the result of a Scoring with Trade Credit Limit query for multiple entities in the context of the logged-in user. If the request is handled correctly, a response will be returned with the 200 code.

The method is called automatically following redirection when checking the status of a processed job, provided that the GET /clientapi/v2.0/ScoringWithTradeCreditLimitReportJobs/{jobId} method is used.

To retrieve the result of a tranche Scoring query on your own, use the GET /clientapi/v2.0/ScoringWithTradeCreditLimitReports method, specifying the required input parameter:

- **jobId** – the unique identifier (*guid*) of a Scoring with Trade Credit Limit query, generated by the client while requesting a scoring query

Output query parameters:

Parameter	Importance
jobId	Scoring with Trade Credit Limit query request identifier provided by the customer
jobStatus	Processing status of a Trade Credit Limit Scoring request Possible values: 0 – Created 1 – InProgress 2 – Completed 3 – Failed
scoringWithTradeCreditLimitReport	Node header with the total query result for the requested tranche, consisting of the recalculation date and the query result set
calculatedAt	Scoring and Trade Credit Limit recalculation date
scoringWithTradeCreditLimitData	Node header containing a set of query results consisting of the queried TIN, Scoring and Trade Credit Limit result.
taxId	Tax identification number provided by the Client, not standardised
scoring	Node header with Scoring data
scoringValue	Scoring value from 0 to 1, with accuracy to 16 decimal places The value determines the probability of a business entity being added to the KRD BIG S.A. within 6 months' time for an amount of at least: a) PercentageIncome – % of annual revenue where the business entity generates annual revenue of at least IncomeThreshold b) DebtThreshold – otherwise (no information on annual revenue or annual revenue is less than IncomeThreshold) Parameter values defined in the " Parameters for a business rule " [dictId=3]
riskGroup	Risk group, dictionary value based on Dictionary of risk group descriptions [dictId=2]
scoringStatusId	Scoring status, dictionary value based on Dictionary of Scoring statuses (reasons for absence) [dictId=1]
tradeCreditLimit	Node header with Trade Credit Limit data
modelType	Type of model used to calculate the Trade Credit Limit Possible values: NULL (with no Trade Credit Limit specified) 1 = M1 2 = M2
status	Trade Credit Limit availability status Possible values*: 6 = Wrong NIP (tax id. no.) 7 = Insufficient data 8 = Internal processing error 72 = Insufficient data (inconsistent balance sheet totals) 73 = Insufficient data (reportedly compromised equity) 74 = Insufficient data (no or very low turnover indicating no economic activity) 75 = Entity not registered with CEDIG or KRS 76 = Business closed (source: REGON register) 100 = Specified Limit (no financial statement alerts) 101 = Specified Limit (occurrence of one of the alerts: weak liquidity/high loss/balance sheet structure - usually related to the level of debt in relation to equity or total assets)

	<p>102 = Insufficient data (outdated financial statements or lack of basic data making it impossible to determine the payment reliability category)</p> <p>701 = Active in liquidation (source: National Court Register)</p> <p>702 = Active in restructuring (source: National Court Register)</p> <p>703 = Active in business failure (source: National Court Register)</p> <p>704 = Suspended in liquidation (source: National Court Register)</p> <p>705 = Suspended in restructuring (source: National Court Register)</p> <p>706 = Suspended in business failure (source: National Court Register)</p> <p>707 = ceased to perform business operations (source: REGON register)</p> <p>708 = Suspended (source: the Central Register and Information on Economic Activity)</p> <p>709 = Suspended (source: National Court Register)</p> <p>712 = Deleted from the register (source: the Central Register and Information on Economic Activity)</p> <p>713 = Deleted from the register (source: National Court Register)</p> <p>714 = Business suspended (source: the Central Register and Information on Economic Activity)</p> <p>715 = In liquidation (source: National Court Register)</p> <p>716 = In restructuring (source: National Court Register)</p> <p>717 = Business suspended (source: National Court Register)</p> <p>9999 = Algorithm error</p> <p>*Active dictionary available in the electronic documentation of the API (swagger)</p>
value	Value of available Trade Credit Limit in PLN

Sample response:

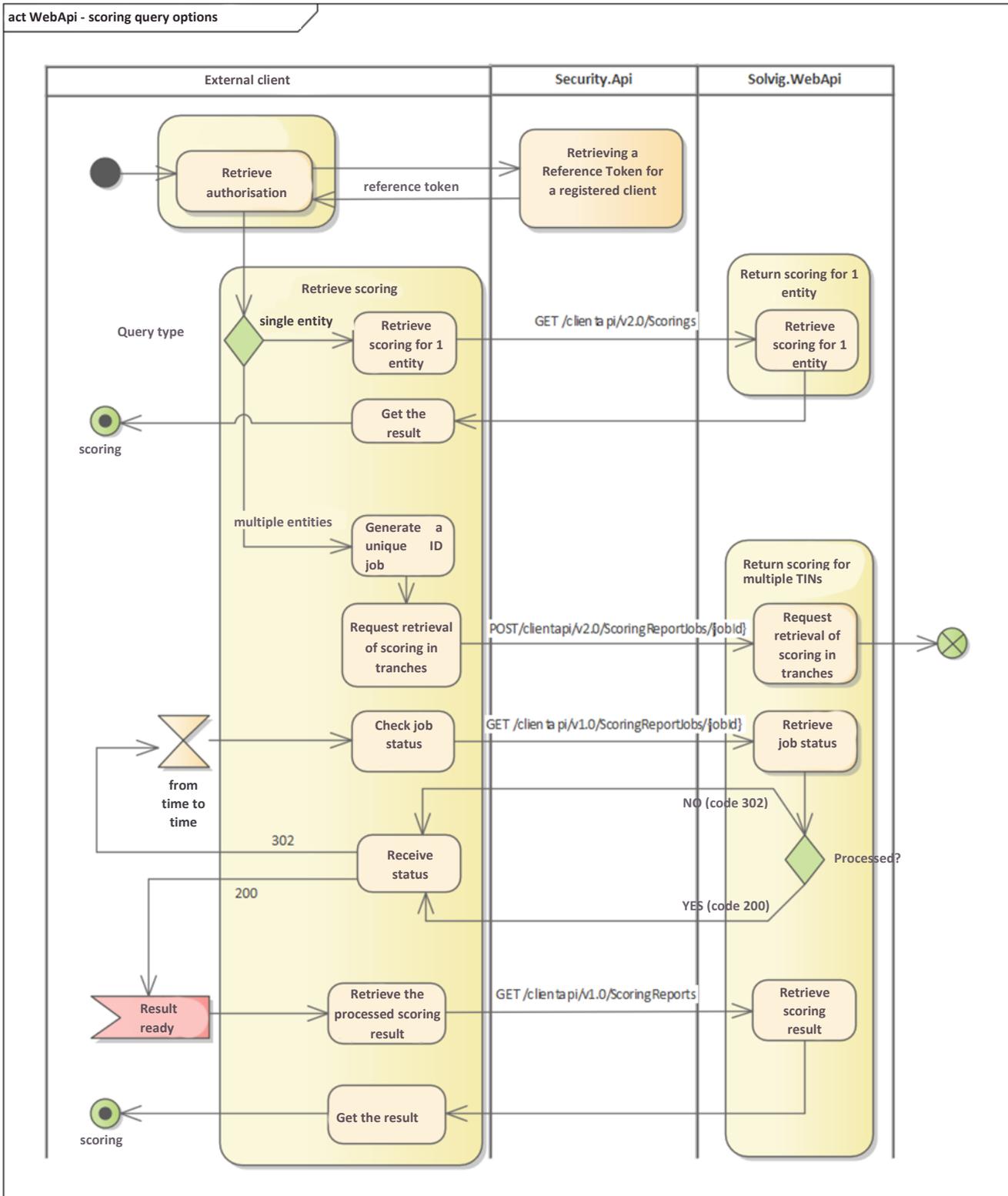
```
{
  "jobId": "79fefcbe-b2be-44cd-abd2-4e3d89a55c33",
  "jobStatus": 2,
  "scoringWithTradeCreditLimitReport": {
    "calculatedAt": "2023-01-01T00:00:00",
    "scoringWithTradeCreditLimitData": [
      {
        "taxId": "5668572064",
        "scoring": {
          "scoringValue": "0.14435712993145",
          "riskGroup": "A",
          "scoringStatusId": 0
        },
        "tradeCreditLimit": {
          "modelType": 1,
          "status": 100,
          "value": 82732
        }
      }
    ]
  }
}
```

Possible errors:

Type	Code	Description
Bad request	400	Bad request
Unauthorized error	401	Unauthorized error
Forbidden	403	Forbidden
Too many requests in a set of time frame	429	Too many requests in a set of time frame
Unexpected error occurred	500	Unexpected error occurred

6 Scheme for single and mass scoring querying by a client

6.1 Single and mass scoring query



6.2 Single and mass scoring query with Trade Credit Limit

