

Interface specification
Public location query
Scheme participant search



Document versions					
Name	Version	Developer	Author	Version description	Date
Messages from the central QS control database	1.0.0	VBO-Services GmbH	Oliver Bandke	Description of location query messages	01/01/2017
Messages from the central QS control database	1.0.0	VBO-Services GmbH	Oliver Bandke	Updates to "description" information 6.1.3	15/11/2018
Messages from the central QS control database	1.0.0	VBO-Services GmbH	Oliver Bandke	Additions to 6.1.3 "Unoccupied" description	18/01/2022
Messages from the central QS control database	1.1.0	VBO-Services GmbH	Oliver Bandke	Additions to 6.1.3 "Free ragne" descriptions	08/11/2022
Messages from the central QS control database	1.1.1	VBO-Services GmbH	Oliver Bandke	Additions to 6.1.3 "GGN; products" descriptions	23/03/2023
Messages from the central QS control database	1.1.1	VBO-Services GmbH	Oliver Bandke	Additions to 6.1.3 "QM-MILCH" ++/HF3	15/05/ and 24/05/2023
Messages from the central QS control database	1.1.1	VBO-Services GmbH	Oliver Bandke	Additions to 6.1.3 "Nr."	01/08/2023
Messages from the central QS control database	1.1.1	VBO-Services GmbH	Oliver Bandke	Update to 6.1.3 "FIAS description"	22/04/2024
Messages from the central QS control database	1.1.1	VBO-Services GmbH	Oliver Bandke	Additions to cultures	01/06/2024
Messages from the central QS control database	1.1.1	VBO-Services GmbH	Oliver Bandke	German Federal law: TierHaltKennzG (THKG) Display of the number(s)	01/08/2024
Messages from the central QS control database	1.1.1	VBO-Services GmbH	Oliver Bandke	HKZ-D Display when authorised (herkunft-deutschland.de)	01/08/2024 (rev01)
Messages from the central QS control database	1.1.1	VBO-Services GmbH	Oliver Bandke	Clarification of separation milk and meat in slaughter cows	soon in 2024

If you have any questions regarding the implementation or would like to be added to our mailing list for current information on the interface, please contact [Dr. Ragnhild Weber-Jonkheer](#) directly.

Contents

1 Document status	3
2 Target audience.....	3
3 Terminology	4
4 Message transmission	7
4.1 Technical aspects	7
4.2 Automatic programme code generation.....	8
4.3 Testing SOAP messages.....	8
5 Encryption	8
5.1 General information on encryption	8
6 Messages.....	9
6.1 Advanced information about QS and AWI participation	9
6.1.1 selectQSTW(QSExtLocationStandardQuery)- Advanced production scope and location data query.....	9
6.1.2 QSExtLocationQSTWReply - the response data.....	9
6.1.3 QSExtLocationQSTWReply - additional description	10
7 Literature	15

1 Document status

Release

2 Target audience

This document is aimed at those who wish to implement/establish the interfaces detailed here for querying location statuses using software. As such, the document does not contain a systematic introduction to encryption technology, web services, XML or SOAP. It assumes the reader already possesses this knowledge or is willing to acquire the appropriate literature as required. Examples of useful books on this topic are: [1], [2], [3]. Furthermore, you will find a wealth of useful content on the fundamentals of these areas on the internet (e.g. on [7], [6] and [5]).

It is also not feasible for the document to provide comprehensive information on the QS scheme itself and how it works. We therefore recommend that each coordinator cooperates with its IT service provider and visits the QS website.

3 Terminology

Some terms that are necessary to understand the QS scheme and interfaces are defined in more detail below.

Location: Within the QS scheme, a location is a logical entity rather than a geographical one and refers to a logical production unit. Locations are the subject of QS inspections. Consequently, checklists always relate to locations. A location is defined as an identification number combined with a QS production scope (see 'Production Scope' chapter, Table 2).

QS production scopes: A production scope relates to a location and characterises the economic system pursued there. The production scope is represented by the CS840018Type data type. The defined production scopes are listed in Table 2. As of 23/06/2003, production scopes from farm locations can be combined and represented accordingly. This is produced by adding the last three figures of a production scope number bit by bit. For example, 1001 and 1002 become 1003. This has a knock-on effect on location reporting. If the database already contains a location with the production scope 1012 and a location extension is to be reported using 1004, it triggers an error message because 1004 is already part of 1012 (= 1008 + 1004).

QS production scopes (CS840018Type)

SUPPLY CHAIN MEAT AND MEAT PRODUCTS

Feed sector

- 70 premix production
- 700 additive production
- 71 compound feed production
- 72 feed material production
- 73 small scale feed material production
- 74 private labelling
- 75 mobile feed milling and mixing plant
- 76 feed trade
- 77 storage and transshipment (feed)
- 78 road transport (feed)
- 79 rail, inland waterway and ocean ship transport (feed)
- 770 matrix coordinator

Agriculture

- 20 agricultural coordinator
- 904 livestock transport

Production branch cattle farming

- 1001 cattle production
- 1002 calf production
- 1004 calf breeding
- 1008 dairy farming

1016 suckling cow production

1320 cows (QM milk)

Production branch pig farming

2001 pig production

2002 gilt and boar rearing

2004 sow and piglets production

2008 piglet rearing

Production branch poultry farming

3001 broiler production

3002 turkey rearing

3004 turkey production

3008 peking duck rearing

3016 peking duck production

301 broiler breeder farming

304 turkey breeder farming

Agriculture hatchery

50 hatchery broiler chicks

51 hatchery turkey chicks

52 transport chicks own vehicles

53 transport chicks 1:1 contracted carriers

Production branch crop farming, grassland use, forage production

7001 cereal production

7002 oilseed production

7004 legume production

7008 sugar beet production

7016 corn production

7032 potato production (without food potatoes)

7064 grassland use and forage production

Slaughtering/deboning

30 slaughtering/deboning beef, veal, pork

31 slaughtering beef, veal, pork

32 deboning beef, veal, pork

33 slaughtering/deboning poultry

34 slaughtering poultry

35 deboning poultry

36 livestock transport cattle/pigs own vehicles

- 37 livestock transport poultry own vehicles
- 38 livestock transport cattle/pigs 1:1 contracted carriers
- 39 livestock transport poultry 1:1. contracted carriers
- 88 own logistic meat and meat products

Processing

- 41 cutting
- 42 processing
- 43 processing/cutting
- 88 own logistic meat and meat products

Butchery

- 90 coordinator butchery
- 91 butchery: production without point of sale
- 92 butchery: production with direct point of sale
- 93 butchery: direct point of sale

Meat wholesale

- 80 meat wholesale
- 880 broker (meat and meat products)
- 87 logistic meat and meat products

Petfood

- 501 Transport (raw material petfood)
- 505 Storage (raw material petfood)
- 510 Processing plant (raw material petfood)
- 515 Petfood plant
- 520 Wholesale (petfood)
- 525 Private labelling (petfood)
- 530 Broker (petfood)

System gastronomy/Communal catering (SG)

- 600 System gastronomy/Communal catering coordinator (as head office)
- 601 Restaurant/Operating site
- 602 SG single company

Food retail

- 60 food retail coordinator
- 61 central warehouse (meat and meat products)
- 6001 food retail (meat and meat products)
- 6003 food retail (meat and meat products, fruit, vegetables, potatoes)

SUPPLY CHAIN FRUIT, VEGETABLES, POTATOES

Production

20 agricultural coordinator

Production branch fruit and vegetable production

4001 fruit production (outdoor)

4002 fruit production (covered)

4004 vegetable production (outdoor)

4008 vegetable production (covered)

Production branch potato production

5001 potato production

Preparation/Processing

450 preparation/processing

Outsourced marketing

460 separated marketing

Wholesale fruit,vegetables, potatoes

81 wholesale fruit, vegetables, potatoes (first-line merchant)

82 wholesale fruit, vegetables, potatoes (trading partner)

84 logistics fruits, vegetables, potatoes

86 food retail warehouse meat and fruit, vegetables, potatoes

840 (coordinator logistics fruits, vegetables, potatoes)

801 agencies fruit, vegetables, potatoes (first-line merchant)

802 agencies fruit, vegetables, potatoes (trading partner)

Preparation/Processing

85 preparation/processing

Food retail

60 food retail coordinator

6002 food retail (fruit, vegetables, potatoes)

6003 food retail (meat and meat products, fruit, vegetables, potatoes)

4 Message transmission

The data is exchanged synchronously. The data is transmitted in an encrypted format using client and server-side certificates. The address of the web service is <https://www.qs-plattform.de/axis/services/rpcrouter>.

4.1 Technical aspects

SOAP is an XML application for data communication. SOAP is used for both *Remote Procedure Calls* (RPC) in the context of *distributed computing*, and asynchronous message exchanges. A SOAP message consists of an *envelope* comprising a *header* and a *body*. The *header* contains various

pieces of processing information and the *body* contains the actual message, which essentially represents an XML document.

4.2 Automatic programme code generation

Various tools are freely accessible online that enable programme codes to be generated for SOAP clients out of WSDL documents, which can then be used to communicate with the defined interfaces.

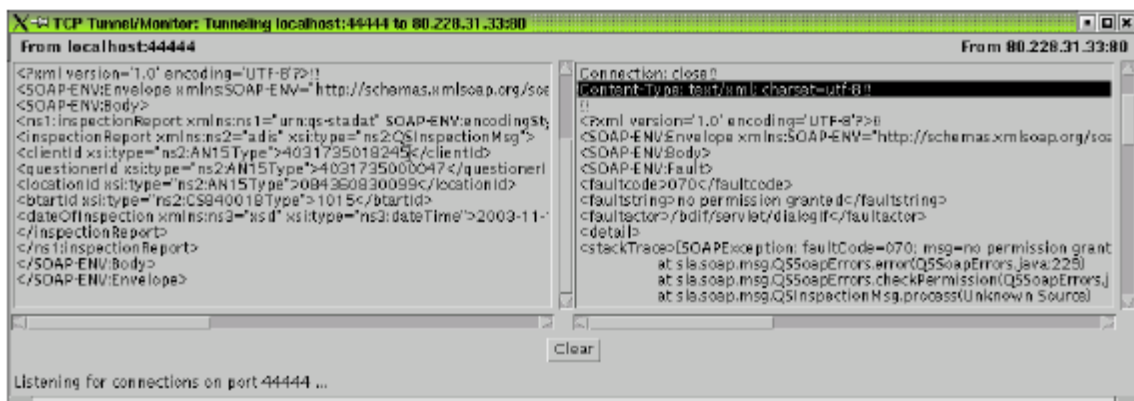
4.3 Testing SOAP messages

Once the clients have been finalised, difficulties tend to arise in understanding the communication behaviour of the client and server. This is where a tool from the AXIS project comes in, which enables the queries from the client and answers from the server to be visualised by “tunnelling” the query. The tunnel is initiated with three parameters: local port, external computer, external port. Initiating a tunnel on a local computer of the QS database server may resemble the following:

```
java org.apache.axis.utils.tcpmon 4444 193.28.96.81 80
```

For this, the client query is not sent directly to the server but to a proxy, which transfers the query to the server. A similar tunnel is illustrated in Figure 1.

Figure 1: Illustration of a SOAP message



5 Encryption

5.1 General information on encryption

The HTTPS protocol must be used in order to access the entire functionality of the coordinator interface. (This solution is completely independent from the technical implementation of the web service and is based on a standardised, technical implementation of the Apache web server-based encryption. Any problems in this regard are very difficult for us to solve on our side and are likely caused by the configuration and settings of the relevant client that enable it to communicate via an HTTPS tunnel.)

6 Messages

6.1 Advanced information about QS and AWI participation

Precondition: Somebody asks whether QS or the AWI have a valid approval in place for a location with regard to a particular species (pigs, cattle, poultry). The species and the location ID for the queried location are known.

Postcondition: The status and production scope of the location are known. If an error occurs, a corresponding alert is generated and returned.

6.1.1 selectQSTW(QSExtLocationStandardQuery)- Advanced production scope and location data query

```
<complexType name="QSExtLocationStandardQuery">
  <sequence>
    <element name="locationId" nillable="true" type="xsd:string"/>
    <element name="bstartId" nillable="true" type="xsd:int"/>
  </sequence>
</complexType>
```

The XML elements have the following semantics:

locationId: The location number of the location.

bstartId: The production scope key of the location for the maximum possible combination for a species according to the key table (1031,2015,3031,4015,5015,7063).

6.1.2 QSExtLocationQSTWReply - the response data

The response message contains the production scopes for which the location possesses approval. For each production scope, the message indicates whether there is a valid scheme agreement in place for the location (1 = yes, 0 = no). A '2' is returned for inactive locations (suspended due to missing salmonella samples). A '3' is returned for locations that are suspended due to other reasons. The approval status of the production scope is also returned in plain text: 'yes' for approved locations, 'no' for unapproved locations, 'inactive' for inactive locations (suspended due to missing salmonella samples) and 'locked' for suspended locations.

```
<complexType name="QSExtLocationQSTWReply">
  <sequence>
    <element name="certifications" maxOccurs="unbounded" minOccurs="0"
      type="tns3:QSLocationQSTWType"/>
  </sequence>
</complexType>

<complexType name="QSLocationQSTWType">
  <sequence>
```

```
<element name="bstartId" nillable="false" type="xsd:int"/>
    <element name="qsCertification" type="xsd:int"/>
    <element name="description" nillable="true" type="xsd:string"/>
    <element name="twCertification" type="xsd:boolean"/>
</sequence>
</complexType>
```

The XML elements have the following semantics:

bstartId: The production scope key of the location.

qsCertification: Key value that indicates whether a valid scheme agreement exists for the location. Key: 0 = no, 1 = yes, 2 = inactive, 3 = locked

description: Description of the key value.

twCertification: Does an AWI certification exist: true/false

6.1.3 QSExtLocationQSTWReply - additional description

This message returns the corresponding result to all basic scopes contained in the transmitted production scope. Accordingly, for example, both 1004 and 1001 are checked when 1005 is transmitted as a bstartID, while for 1015 each basic scope is contained up to 8.

The "description" parameter in the response can contain additional information:

- FIAS, for a passed FIAS audit
- FB, if it is a family business
- REGIO, for a passed "Regionalfenster" audit
- INACTIVE, excluded from supplying pigs as part of the QS scheme until sampling has been carried out and the sample results are available in the salmonella database
- PREFAT, pig fattening – only pre-fattening, suspended for QS fattened pigs for slaughter
- UNOCCUPIED, poultry farms that do not have any housed birds = unoccupied, no eligibility of delivery in the QS scheme
- FREI, free range husbandry
- GGN, GlobalG.A.P. number
- PRODUCTS, fruit, vegetable, potato products
- NR, location number when searching with QS-id.
- QM-MILCH, certification scheme; with ++/HF3, if applicable
- THKG identification number(s) for husbandry facilities in accordance with TierHaltKennzG | - separated within location number (VVVO no.)
- HKZ-D: authorised participation in Herkunftskennzeichen Deutschland of ZKHL (herkunft-deutschland.de)
- *soon: MILK, for locations that are eligible to deliver for milk, only (within QM-Milch standard), but not for slaughter cows*

- *Products*
- 250214 *wheat seedlings*
- 999998 *Producers with not self-produced goods*
- 140020 *sweet cherry*
- 401020 *peanuts*
- 270990 *other stem vegetables (fresh)*
- 270060 *leek*
- 256070/1 *marjoram*
- 252020/1 *Glassworts*
- 220040 *spring onion*
- 256070 *thyme*
- 256100 *tarragon*
- 110990 *others citrus fruit*
- 154010/1 *cowberry*
- 130040 *medlar*
- 220010/1 *garlic (fresh)*
- 256030/4 *lovage*
- 231010 *tomato*
- 161020 *fig*
- 252990 *other spinach and similar leaves*
- 130030 *quince*
- 213020/1 *carrot (bulk goods)*
- 213040/1 *ginger*
- 110040 *lime*
- 120110 *walnut*
- 251010 *lamb's lettuce (outdoor)*
- 154990 *others small fruit and berries*
- 213080/2 *small radish (outdoor)*
- 130010 *apple*
- 130020/1 *nashi pear*
- 234001 *Corn (popcorn corn)*
- 300020 *lentil (dried)*
- 162020 *lychee*
- 233030 *watermelon*
- 251010/1 *lamb's lettuce (greenhouse)*
- 130990 *others pome fruits*
- 213080/3 *small radish (greenhouse)*
- 140010 *apricot*
- 231040 *okra*
- 256990/3 *ramson/ wild garlic/ bear's garlic*
- 120070 *macadamia*
- 253000 *vine leaf*
- 270040 *fennel*
- 140990 *other stone fruits*
- 213080 *radish (outdoor)*
- 270050 *artichoke*
- 256070/2 *oregano*
- 256990/3
- 110050 *mandarins (clementine, tangerine and other hybrids)*
- 231020 *capsicum*
- 153990 *other cane fruits*

- 231030 *aubergine*
- 120090 *pine nuts*
- 232030/002 *Calabash (e.g. Calabash)*
- 120010 *almond*
- 242020/2 *savoy cabbage*
- 163050 *pomegranate*
- 212990 *other tropical root and tuber vegetables*
- 163010 *avocado*
- 252020 *purslane (winter purslane (miner's lettuce), glasswort)*
- 232030/008 *Squashes (e.g. Spaghetti squash, Halloween squash, Pattypan squash)*
- 233020/001 *Musky gourd (e.g. Butternut)*
- 252030 *chard*
- 110030 *lemon*
- 110010 *grapefruit (shaddocks, pomelos, sweeties, tangelo, ugli and other hybrids)*
- 220990 *other bulb vegetables*
- 270080 *bamboo shoots*
- 251020/8 *lettuce (romaine; outdoor)*
- 233020/003 *Pumpkin (giant) (e.g. Hokkaido)*
- 163080 *pineapple*
- 232030 *courgette*
- 243020 *kale*
- 242020/4 *pointed cabbage*
- 163020 *banana*
- 256030/2 *celery leaves; sorrel*
- 233020/1 *Pumpkin (others)*
- 163080 *Ananas*
- 234000 *Corn (sweet corn)*
- 232020 *gherkin*
- 242020/3 *white cabbage*
- 256080 *basil*
- 251080/9 *other sprouts and shoots*
- 163030 *mango*
- 220020 *onion*
- 232010 *cucumber*
- 999999 *preparation*
- 130020 *pear*
- 252010/1 *turnip greens*
- 162030 *maracuja; passionfruit (granadilla)*
- 154080 *elderberries (wild rowan berry)*
- 120060 *hazelnut*
- 0251000/1 *coloured lettuce (lollo, leaf-oak, batavia) (outdoor)*
- 270030 *celery*
- 212020 *sweet potato*
- 154060 *mulberry*
- 120040 *chestnut*
- 154010 *cultivated blueberry*
- 0631000 *edible flowers*
- 241020 *cauliflower (romanesco)*
- 213110 *white turnip; turnip; swedes*
- 213040 *horseradish*
- 251080/1 *mizuna (leaves and sprouts of brassica spp)*

- 153030 *raspberry*
- 0280020 *wild fungi (morels, chanterelle)*
- 260010 *beans (with pods)*
- 212030 *yams*
- 256990/2 *balm / lemon balm*
- 300010 *beans (dried)*
- 154030 *currant (red, black, white)*
- 0251000 *coloured lettuce (lollo, leaf-oak, batavia) (greenhouse)*
- 260020 *beans (without pods)*
- 220020/1 *onions (silverskin onions)*
- 232990 *other curcubits - edible peel*
- 233010 *melon (muskmelon, kiwano)*
- 163090 *bread fruit; jackfruit*
- 154010/2 *josta berry*
- 022030 *shallots*
- 256990/1 *savory*
- 241010 *broccoli*
- 243990 *other leafy brassica*
- 256080/1 *mint*
- 163060 *cherimoya; rambutan*
- 161050 *carambola*
- 251080 *baby leaf*
- 153010 *blackberry*
- 241990 *other cauliflower*
- 213020 *carrot (bunch)*
- 154020 *cranberry*
- 211000 *potato*
- 231010/1 *physalis/cape gooseberry*
- 254000 *water cress (water convolvulus, water clovers, water mimosas)*
- 256990 *other fresh herbs*
- 140030 *nectarine*
- 163100 *durian*
- 256010 *chervil*
- 151010/1 *green table grape*
- 213080/1 *radish (greenhouse)*
- 120030 *cashew nut*
- 163990 *other large fruits - inedible peel*
- 161030 *olive*
- 300030 *peas (dried)*
- 162010 *kiwi*
- 151010/2 *blue table grape*
- 270070 *rhubarb*
- 255000 *chicory*
- 300990 *other legumes, dried*
- 110020 *orange*
- 213050 *topinambur*
- 220010 *garlic*
- 270010/1 *white asparagus*
- 242010 *Brussels sprouts*
- 231020/1 *chili peppers*
- 260990 *other legumes - fresh*

- 163040 *papaya; tamarillo*
- 163070 *guava*
- 213030 *celeriac*
- 256060 *rosemary*
- 243010 *chinese cabbage (indian (chinese) mustard, pak choi)*
- 162990 *other small fruits - inedible peel*
- 120020 *brazil nut*
- 154050 *rose hip*
- 244000 *kohlrabi (outdoor)*
- 213010 *beetroot*
- 161010 *date*
- 242990 *other head cabbages*
- 213060 *parsnip*
- 130050 *loquats / japanese medlars*
- 244000/1 *kohlrabi (greenhouse)*
- 242020 *red cabbage*
- 256030/1 *dill*
- 251990 *other lettuces, other salad varieties incl. brassicaceae*
- 120080 *pecans*
- 161060 *kaki; japanese persimmons*
- 120050 *coconut*
- 251060 *roman rocket / rucola*
- 251020/2 *iceberg lettuce (outdoor)*
- 280990 *other cultivated fungi*
- 256040 *parsley*
- 162040 *prickly pear; cactus fruit; pitaya*
- 251020 *head lettuce (outdoor)*
- 256050 *sage*
- 251020/3 *iceberg lettuce (greenhouse)*
- 233990 *other cucurbits - inedible peel*
- 256040/1 *parsley (pot)*
- 212010 *cassava (dasheen, eddoe (japanese taro), tannia, manioc)*
- 270010/2 *green asparagus*
- 251020/1 *head lettuce (greenhouse)*
- 140020/1 *sour cherry*
- 260030 *peas (with pods)*
- 120990 *other nuts (shelled/unshelled)*
- 213070 *parsley root*
- 251030 *escarole (radiccio, endivie, ...)*
- 151010/3 *kiwi berry*
- 256030/3 *coriander*
- 256020 *chive*
- 213090 *black salsify*
- 260040 *peas (without pods)*
- 231990 *other solanaceae*
- 140030/1 *peach*
- 256030/5 *caraway leaves*
- 251040 *garden cress*
- 252010 *spinach*
- 152000 *strawberry (outdoor)*
- 161990 *other miscellaneous fruits - edible peel*

- 140040 *plum (reneclaude, mirabelle)*
- 153020 *dewberry (loganberry)*
- 280010 *cultivated fungi (common mushroom, oyster mushroom, shi-take)*
- 154040 *gooseberry*
- 152000/1 *strawberry (greenhouse)*
- 213990 *other root and tuber vegetables except sugar beet*
- 120100 *pistachio*
- 256090 *bay leaves*
- 500020 *Pseudocereals (Amaranth, Buckwheat, Chia seeds, Quinoa)*
- 161040 *kumquat*
- 0233000 *oil pumpkin*
- 233020 *pumpkin*
- 251041 *microgreens*

7 Literature

[1] Harold, Means: XML in a Nutshell, (O'Reilly), 2001.

[2] Seely: SOAP: Cross Platform Web Service Development using XML (Prentice Hall), 2002.

[3] Snell usw.: Programming Web Services with SOAP (O'Reilly), 2002.

[4] <http://www.gnupp.de>.

[5] <http://www.apache.org>.

[6] <http://www.xml.org>.

[7] <http://www.w3.org>.

[8] <http://www.gnupg.org>.

[9] <http://www.w3.org/TR/SOAP-dsig>.

QS Qualität und Sicherheit GmbH

Managing Director
Dr. Alexander Hinrichs

Schwertberger Straße 14
53177 Bonn, Germany

Tel +49 228 35068-0
Fax +49 228 35068-10

info@q-s.de
www.q-s.de/en/

Image: QS