

Interface specification  
**Public location query**



Document versions					
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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

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.

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## 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
- 701 compound feed production (special processes)
- 72 feed material production
- 702 feed material production (special processes)
- 73 small scale feed material production
- 703 small scale feed material production (special processes)
- 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)

##### 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)

#### **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.

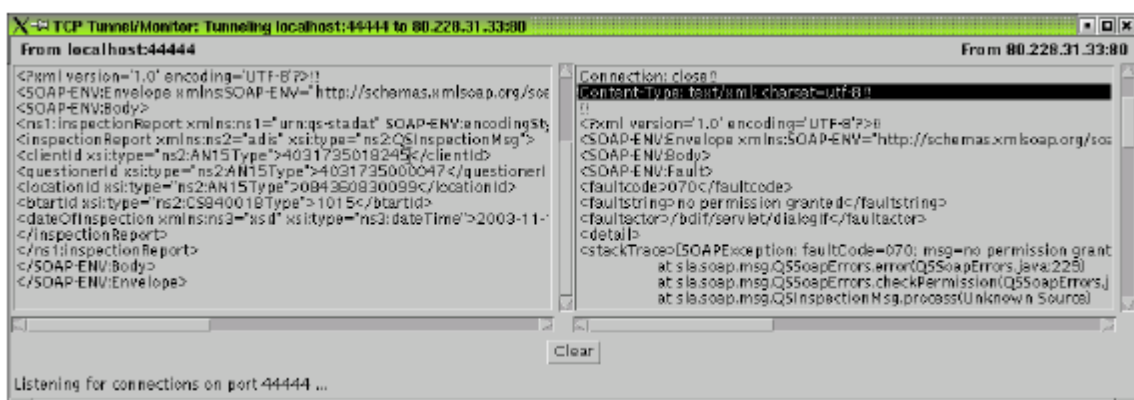
### 4.3 Testing SOAP messages

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 44444 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

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 (radicchio, 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

## 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>.

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