

## STOC free: WP2, Deliverable 2.2

### Second draft questionnaire on aspects of freedom

**A. van Roon<sup>1</sup>, I. Santman<sup>1,3</sup>, D. Graham<sup>5</sup>, G. van Schaik<sup>1,3</sup>, M. Nielen<sup>1</sup>, M. Mercat<sup>2</sup>, L. van Duijn<sup>3</sup>, J. Frössling<sup>6</sup>, A. Lindberg<sup>6</sup>, J. Gethmann<sup>7</sup>, C. Sauter-Louis<sup>7</sup>, G. Gunn<sup>8</sup>, C. Gomes<sup>8</sup>, M. Henry<sup>8</sup>, C. Fourichon<sup>2</sup>, A. Madouasse<sup>2</sup>, S. More<sup>4</sup>**

<sup>1</sup>Utrecht University, the Netherlands, <sup>2</sup>BIOEPAR, INRA, Oniris, France, <sup>3</sup>GD Animal Health, the Netherlands, <sup>4</sup>University College Dublin, Ireland, <sup>5</sup>Animal Health Ireland, <sup>6</sup>Swedish National Veterinary Institute, Sweden, <sup>7</sup>FLI, Germany, <sup>8</sup>SRUC, Scotland

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## Introduction

In the project development of a Surveillance Tool for Outcome based Comparison of FREEdom of infection generated by control programmes (STOC free), six countries collaborate to develop a framework to objectively estimate the probability that a given entity is truly free from infection and the associated uncertainty given heterogenous input information. The project consists of five different workpackages in which a model (WP1) and data collection tool (WP2) will be developed. Subsequently the developed tools will be tested and validated in country specific case studies (WP3). The results will be disseminated (WP4) and the project will be managed in a fifth workpackage. This report describes the second deliverable of work package two: development of a data collection tool 'STOC free data'.

In the data collection tool quantitative and qualitative data can be collected in support of STOC free model (will be developed in WP1). The objectives of WP2 are two-fold:

1. To develop a generic data collection framework, guided by the methodology (STOC free model) developed in WP1, and
2. To use this framework to collect specific quantitative information about control programmes (CPs) that serve as input for STOC free model.

A first step towards the data collection tool STOC free DATA, is the development of a questionnaire. All aspects that can influence, either directly or indirectly, the confidence of freedom from infection in a BVDV CP are queried. In April 2018 the first draft of the questionnaire was delivered and in this document the second draft of the questionnaire is presented.

At this point no major adjustments have been made to the first draft as the development of the questionnaire is an iterative process with WP1. In WP1 the quality and availability of data will be evaluated that can act as input for STOC free model, which aim to provide an objective and standardized comparison of different CPs. At this moment the development of STOC free model is ongoing and it is too early to further develop the questionnaire. It is foreseen that more substantial changes will be made to the questionnaire during the coming months. Subsequently, the questionnaire will be transformed to a final data collection tool (April 2019) to collect all relevant (quantitative) data to run the STOC free model.

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Territory level = The area (i.e. region or country) where control measures are homogeneous

Herd level = The farm

Infection = The hazard of interest

Purchase = Introduction of cattle in the herd or territory originating from the same country

Import = Introduction of cattle in the herd or territory originating from another country

## General Information

1. Date of filling in this questionnaire: (date)
2. Infection:
3. What is the herd level prevalence (herds with indication of virus circulation) in the territory? % in dairy and % in non-dairy
4. What BVD viral strains are circulating in the territory? BVD type 1/BVD type 2  
*If data available: In what ratio (%)?*
5. Country/territory covered by the control programme:
6. At what level will freedom be demonstrated? Herd/territory
7. Which herd types are covered by the programme? Dairy, beef breeding, beef non-breeding
8. Official title of the programme:

## Demographic information

### Territory level

9. What is the total number of cattle and cattle herds in the territory?

Herd type	Number of herds	Number of cattle
Dairy		
Non-dairy		
<i>If data available please specify non-dairy:</i>		
Beef breeding		
Beef non-breeding		
Mixed*		

\*Farms with dairy and beef cattle

10. How many calves were born in the past 12 months? (number)
11. Please indicate how the calving pattern on animal level is distributed over the year.

	Dairy cattle	Beef breeding cattle
January-March	... %	... %
April-June	... %	... %
July-September	... %	... %
October-December	... %	... %

12. Is the cattle population evenly distributed across the territory covered by the control programme? Yes/no  
*If yes, proceed with question 14, if not proceed with question 13.*
13. Can you indicate the cattle herd density in a low density area and in a high density area? (number cattle herds per km<sup>2</sup>)? (low density <10, medium density 10-25, high density >25)

14. Are the farmed animal species listed in the table present in the territory?

Type of animal species	Yes/no
Pigs	
Poultry	
Small ruminants	
Deer	

15. Has the territory boundaries with territories or countries with a different control programme for the infection? Yes/no
16. Has the territory boundaries with territories or countries with no control programme for the infection? Yes/no
17. Has the territory boundaries with territories or countries with a higher prevalence for the infection? Yes/no

#### Herd level

18. What is the number of cattle on the farm?

Type of cattle	Number of cattle
Dairy	
Calves <6 months	
Youngstock (not pregnant)	
Youngstock (pregnant)	
Adult	
Beef breeding	
Calves <6 months	
Youngstock (not pregnant)	
Youngstock (pregnant)	
Adult	
Beef non- breeding	
Calves <6 months	
Older cattle	

19. How many calves were born in the past 12 months? (number)

20. Please indicate how the calving pattern within the herd is distributed over the year.

	Dairy cattle	Beef breeding cattle
January-March	... %	... %
April-June	... %	... %
July-September	... %	... %
October-December	... %	... %

21. How many (estimation) dairy and beef farms are there within one km distance of the farm (measure from main building to main building)? (Dairy: low density <10, medium density 10-25, high density >25  
Beef breeding: low density <10, medium density 10-25, high density >25)
22. Does the farm also keep other animal species? Yes/no  
*If yes proceed with question 23, if not proceed with question 24.*
23. Please specify the number of animals (number), whether they are housed on the same location (yes/no), whether they graze on the same pasture (yes/no) and whether there is direct animal to animal contact possible (yes/no).

Type of animal species	Number	Same location	Same pasture	Direct contact
Pigs				
Poultry				
Small ruminants				
Farmed deer				

## Programme background

### Territory level

24. Is the control programme voluntary or mandatory and what percentage of cattle farms participate in the programme? Please fill in per herd type:

Herd type	Voluntary/Mandatory	Participation (%)
Dairy		
Non-dairy		
<i>If data available please specify non-dairy:</i>		
Beef breeding		
Beef non-breeding		

25. Is the control programme aiming to control or eradicate the disease? Control/Eradication
26. Are there any legal requirements that:

Underpin the control programme?	Yes/no
Require the reporting of a suspected case of the infection?	Yes/no
Require the reporting of a confirmed case of the infection	Yes/no
Restrict the movement of animals without a direct negative status (actually tested)	Yes/no
Restrict the movement of animals without an indirect negative status (dam of carrier animal)	Yes/no



27. What is the status of infection in the country: Believed to be absent/confirmed absent/sporadic /recently introduced/endemic (continuously present)
28. What percentage of eligible cattle farms in the territory that participate in the control programme has a free status (no indication of virus circulation)?

Herd type	Free status (%)
Dairy	
Non-dairy	
<i>If data available please specify non-dairy:</i>	
Beef breeding	
Beef non-breeding	

#### Herd level

29. Since when does the farm participate in a BVD control programme? (date)
30. When was the current free status on the farm obtained? (date)



## Test strategy

### Programme components

31. Please list all possible target groups that may be tested and fill in all fields in the table.

*In case different types of samples can be chosen to test per target group, every target group-sample is a separate component. For example calves tested by ear notch, calves tested by blood/serum/plasma etc.*

Target group <sup>1</sup>	Type of sample <sup>2</sup>	Frequency of testing per year	Number of animals tested per test moment <sup>3</sup>	Data collection point <sup>4</sup>	Collector <sup>5</sup>	Test method <sup>6</sup>	Individual or pooled <sup>7</sup>	Average number of animals per pool	Sensitivity <sup>8</sup>	Specificity <sup>8</sup>

<sup>1</sup> Options: Calves <6 months, Youngstock (6 months – 2 years), Non-pregnant youngstock, Pregnant youngstock, Lactating cattle, Non-lactating cattle, Animals with clinical signs, Purchased animals, At slaughter, Other

<sup>2</sup> Options: Bulk milk, Individual milk samples, Blood/Serum/Plasma, Ear notch, Tissue (biopsy), Tissue (post mortem), Semen, Urine, Feces/fecal swab, Other swab, Meat juice, Environmental sample, Vector, Saliva, Other

<sup>3</sup> Options: all animals in the target group, representative group of animals (please specify)

<sup>4</sup> Options: Farm, Wild life habitat, Abattoir, Coordination centre, AI centre, Rendering plants, Diagnostic laboratory, Market, Other

<sup>5</sup> Options: Farmer, Veterinarian, Abattoir personnel, other

<sup>6</sup> Options: Ab. ELISA-P80/NS3, Ag ELISA-p80/NS3, Ag ELISA-E<sup>ms</sup>, RTPCR

<sup>7</sup> Options: Individually tested, Pooled, both possible

<sup>8</sup> Range



32. Interpretation of test results. Please fill in for every component listed in the previous table.

Target group <sup>1</sup>	Design prevalence	Cut-off value applied	Number of animals that needs to be positive to call a herd positive	Time between sample request/entering the herd and submission of samples <sup>2</sup>

<sup>1</sup> Options: Calves <6 months, Youngstock (6 months – 2 years), Non-pregnant youngstock, Pregnant youngstock, Lactating cattle, Non-lactating cattle, Animals with clinical signs, Purchased animals, At slaughter, Other

<sup>2</sup> Maximum



33. Please fill in this table to indicate what strategy is followed in case of an inconclusive or positive test result. Please fill in for every component listed in the previous table.

Target group <sup>1</sup>	Confirmatory test allowed <sup>2</sup>	Same test repeated <sup>3*</sup>	% of animals retested for confirmation	Time between initial and confirmatory test <sup>4</sup>	Obligation to remove carrier animals to slaughter <sup>5</sup>	Time between positive test result and removal of test positive animal (if removed)

<sup>1</sup> Options: Calves <6 months, Youngstock (6 months – 2 years), Non-pregnant youngstock, Pregnant youngstock, Lactating cattle, Non-lactating cattle, Animals with clinical signs, Purchased animals, At slaughter, Other

<sup>2</sup> Options: yes/no

<sup>3</sup> Options: Same type of sample, same test/same type of sample, different test/different type of sample, same test/different type of sample, different test/more options possible depending on lab or situation

<sup>4</sup> Range

<sup>5</sup> Options: yes/no

\* If not: similar tables as the tables in question 27 and 28 should appear If yes: the rest of this table should be filled in

### Territory level

34. Please indicate which surveillance components are followed by herds in the territory and in what proportion.  
*For example 50% of participating herds use bulk milk testing and 50% ear notch testing.*

### Herd level

35. Please indicate which surveillance components listed in the questionnaire are followed at this specific farm.

## Farm management

### Territory level

#### Grazing

36. Are farms in the territory fragmented (separate parcels)? Yes/no  
*If yes proceed with question 37, if not proceed with question 38.*
37. If known please indicate the percentage of farms that is fragmented. 0-20%, 20%-40%, 40%-60%, 60-80% or 80%-100%.
38. Do farms in the territory practice zero grazing? Yes/no  
*If yes proceed with question 39, if not proceed with question 40.*
39. What percentage (minimum and maximum) of all cattle herds in the territory practice zero grazing?

Herd type	Percentage
Dairy	%
Non-dairy	%
<i>If data available please specify non-dairy:</i>	
Beef breeding	%
Beef non-breeding	%

40. Is communal grazing (cattle of different farms grazing on the same pasture at the same time) a feature in the territory? Yes/no  
*If yes proceed with question 41, if not proceed with question 45.*
41. What percentage (minimum and maximum) of all cattle farms in the territory graze (part of) their cattle on communal land?
42. Which cattle groups are eligible for communal grazing? Newborn calves (0-6 months), Youngstock (pregnant and non-pregnant mixed), Non-pregnant youngstock, Pregnant youngstock, Cattle in first lactation, Lactating cattle, Non-lactating cattle, other)
43. Is it possible that (part of the) cattle grazed on communal land in the territory originates from farms that participate in a different control programme or in no control programme for the infection?
44. Is it allowed to graze cattle on communal land in the territory without a BVD free status?

#### Breeding

45. What percentage of the breeding farms own a bull for breeding with their cattle? percentage of dairy, beef breeding farms
46. Is it compulsory to test breeding bulls for the pathogen? Yes/no

Purchase/import

**All following questions concern the most recent year**

47. What percentage of the cattle farms have a closed herd (no purchase of cattle)? (dairy and beef breeding)

Herd type	Percentage of closed farms
Dairy	
Non-dairy	
<i>If data available please specify non-dairy:</i>	
Beef breeding	

48. What is the number of cattle traded within the territory into breeding herds? (dairy and non-dairy)

Herd type	Number of cattle
Dairy	
Non-dairy	
<i>If data available please specify non-dairy:</i>	
Beef breeding	

49. What percentage of cattle traded within the territory into breeding herds was purchased at a market/trader and what percentage was purchased directly from another farm? (dairy and non-dairy)?

Herd type	Percentage of cattle purchased at a market/trader	Percentage of cattle purchased directly from farm
Dairy		
Non-dairy		
<i>If data available please specify non-dairy:</i>		
Beef breeding		

50. What is the average number of cattle traded into breeding herds per trade moment? (dairy and non-dairy)?

Herd type	Number of cattle per trade moment
Dairy	
Non-dairy	
<i>If data available please specify non-dairy:</i>	
Beef breeding	

51. What is the number of cattle imported into breeding herds in the territory (dairy and non-dairy)?

Herd type	Number of cattle imported
Dairy	
Non-dairy	
<i>If data available please specify non-dairy:</i>	
Beef breeding	

52. What is the average number of cattle imported into breeding herds per import moment? (dairy and non-dairy)?

Herd type	Number of cattle per import moment
Dairy	
Non-dairy	
<i>If data available please specify non-dairy:</i>	
Beef breeding	

53. What percentage of cattle imported into breeding herds was purchased at a market/trader and what percentage was purchased directly from another farm? (dairy and non-dairy)?

Herd type	Percentage of cattle imported from a market/trader	Percentage of cattle imported directly from farm
Dairy		
Non-dairy		
<i>If data available please specify non-dairy:</i>		
Beef breeding		

54. Are farms allowed to purchase cattle from farms where the infection status is unknown? (dairy and beef breeding) Yes/no
55. Are farms allowed to import cattle from non-infection free countries? (dairy and beef breeding) Yes/no
56. Is testing of purchased cattle mandatory? (all purchased cattle, cattle purchased from farms with an unknown status for the infection, not mandatory)
57. Is testing of imported cattle mandatory? (all imported cattle, cattle imported from farms with an unknown status for the infection)
58. Are purchased cattle tested before or after arrival on the farm?  
*If tested after arrival proceed with question 59, if tested before arrival proceed with question 60.*
59. Within how many days after arrival should purchased cattle be tested? (number)

Shows/market

60. Do cattle shows allow attendance of cattle with an unknown infection status for the virus? Yes all cattle shows, some cattle shows do some do not, No

Vaccination

- 61. Is vaccination against the infection applied? Yes/no  
*If yes proceed with question 62, if not proceed with question 64*
- 62. What percentage of cattle farms vaccinate (some of) their animals?
- 63. Which vaccines are allowed? (Bovalto respi, Bovela, Bovidec, Bovilis, Mucosiffa, Rispoval RS, Rispoval 3, Rispoval 4, Rispoval BVD, Vacoviron, other)

**Herd level**

Housing

64. Which animal groups are housed together under one roof? Yes/no

<b>Dairy</b>	Calves	Youngstock (not pregnant)	Youngstock (pregnant)	Adult
Calves				
Youngstock (not pregnant)				
Youngstock (pregnant)				
Adult				
<b>Beef breeding</b>	Calves	Youngstock (not pregnant)	Youngstock (pregnant)	Adult
Calves				
Youngstock (not pregnant)				
Youngstock (pregnant)				
Adult				

65. Are pregnant cattle moved to an individual calving pen prior to giving birth? Dairy adult: yes/no Dairy heifer: yes/no Beef breeding adult: yes/no Beef breeding heifer: yes/no



Grazing

- 66. Is the farm fragmented (separate parcels)? Yes/no
- 67. What is the number of fragments? (number)
- 68. How many neighbours border to the parcels of the farm? (number)
- 69. Are cattle allowed to graze (dairy and beef breeding) for any period during the year and is over the fence (i.e. nose to nose) contact possible with cattle of neighbouring farms?

<b>Dairy</b>	Allowed to graze yes/no	Over the fence contact yes/no
Calves		
Youngstock (not pregnant)		
Youngstock (pregnant)		
Adult		
<b>Beef breeding</b>		
Calves		
Youngstock (not pregnant)		
Youngstock (pregnant)		
Adult		

*If cattle is allowed to graze proceed with question 70, if not proceed with question 75.*

- 70. Which animal groups are grazed together on the same parcel? Yes/no

<b>Dairy</b>	Calves	Youngstock (not pregnant)	Youngstock (pregnant)	Adult
Calves				
Youngstock (not pregnant)				
Youngstock (pregnant)				
Adult				

<b>Beef breeding</b>	Calves	Youngstock (not pregnant)	Youngstock (pregnant)	Adult
Calves				
Youngstock (not pregnant)				
Youngstock (pregnant)				
Adult				

71. Is there over the fence (i.e. nose to nose) contact possible with cattle from farms that do not participate in a control programme for the infection or that participate in a different control programme for the infection? (yes both are possible, yes with cattle from farms that do not participate in a control programme, yes with cattle from farms that participate in a different control programme, no both are not possible)
72. Is communal grazing applied with herds from other farms?
73. Did any of the cattle break out into neighbouring herds in the past 12 months?
74. Did any of the cattle from neighbouring farms break into the herd in the past 12 months?

#### Breeding

75. Is natural breeding used on the farm? Yes/no  
*If yes proceed with question 76, if not proceed with question 78.*
76. Is the bull purchased? Yes/no
77. Is the bull tested for the infection before use? Yes/no
78. Is artificial insemination used on the farm? Yes/no
79. Is only semen used from collection centres approved for intracommunity trade?

#### Purchase/import

##### All following questions concern the most recent year

80. Has the farm purchased cattle from farms within the country without a certified free status?  
*If yes proceed with question 81 if not proceed with question 83.*
81. How many cattle?

<b>Dairy</b>	Number of cattle
Calves	
Non-pregnant cattle	

Pregnant cattle	
<b>Beef breeding</b>	
Calves	
Non-pregnant cattle	
Pregnant cattle	

82. Were these animals tested? (Yes all purchased cattle, yes almost all purchased cattle, yes but only cattle with an unknown status, yes but only cattle of a certain age group, yes but because of another reason: , no)
83. Has the farm imported cattle from another country in the past 12 months?  
*If yes proceed with question 84, if not proceed with question 86.*
84. How many cattle?

<b>Dairy</b>	Number of cattle
Calves	
Non-pregnant cattle	
Pregnant cattle	
<b>Beef breeding</b>	
Calves	
Non-pregnant cattle	
Pregnant cattle	

85. Were these animals tested? (Yes all imported cattle, yes but only cattle with an unknown status, yes but only cattle of a certain age group, yes but because of another reason: , no)
86. Are purchased/imported cattle tested before or after arrival on the farm?  
*If tested after arrival proceed with question 87, if tested before arrival proceed with question 90.*
87. What is the average number of days between arrival and having the test result?
88. Are purchased animals quarantined upon arrival/kept separate from the main herd? Yes/no  
*If yes proceed with question 89, if not proceed with question 90*

89. For how long?  
*Proceed with question 91.*
90. Are purchased cattle housed or grazed together with pregnant cattle before the animals are tested for the infection?

#### Shows/market

91. Has the farmer attended shows with his cattle?  
*If yes proceed with question 92, if not proceed with question 93*
92. Were these animals vaccinated before attending the show?
93. Have animals returned from the market (unsold) in the past 12 months?  
*If yes proceed with question 94, if not proceed with question 95*
94. Were these animals quarantined upon return?

#### Hygiene

95. Does the farm transport cattle with transport vehicles that are shared with other herds?
96. Is farm equipment shared with other farms?
97. If yes, is equipment disinfected after it is used on another farm? Please answer with never, sometimes, often, always
98. Are boots and overalls (new or only used on this farm) provided by the farm for personnel and farm visitors?

#### Vaccination

99. Is vaccination against the infection applied on the farm?  
*If yes proceed with question 100.*
100. For how many years has the herd been vaccinated?
101. Which vaccine is applied on the farm? (Bovalto respi, Bovela, Bovidec, Bovilis, Mucosiffa, Rispoval RS, Rispoval 3, Rispoval 4, Rispoval BVD, Vacoviron, other)