



BICONTAM UNIT

MINUTES OF THE 15TH MEETING OF THE WORKING GROUP ON "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held by WEB on 9 April 2019

(Agreed on 26 April 2019)

Participants

■ Working Group Members:

João André Carriço

Eva Litrup

Joël Mossong

Stefano Morabito

■ European Commission:

Margherita Fanos (DG SANTE C3)

■ EFSA:

BIOCONTAM Unit: Valentina Rizzi (Chair), Beatriz Guerra (secretariat)

AMU Unit: Federica Barrucci

DATA Unit: Luca Pasinato

TS Unit: Giancarlo Costa

■ Others:

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Vitor Borges, Guy Cochrane, Tim Dallman, Renata Karpíšková



ECDC Staff:

Ivo Van Walle (co-chair, secretariat), Saara Kotila

1. Welcome and apologies for absence

The Chair welcomed the participants.

Apologies were received from Michel-Yves Mistou (EFSA expert), Eelco Franz (ECDC expert), Chiara Bianchi, Erik Alm, Daniel Palm, Marc Struelens (ECDC), Pamina Suzuki and Martial Plantady (DG SANTE G4).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence¹ and the Decision of the Executive Director on Competing Interest Management,² EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process.

Certain interests were declared orally by the members before the beginning of the meeting. For further details on the outcome of the screening of the Oral Declarations of Interest made at the beginning of the meeting, please refer to the Annex.

4. Agreement of the minutes of the 13th Working Group meeting held by web on 29 March 2019.

The minutes of the 13th Working Group meeting held by web on 29 March 2019 were agreed by written procedure on 5 April 2019.³

5. Scientific topics for discussion

5.1. Draft Technical Report

EFSA and ECDC explained the main changes implemented in the report. These affected mainly the abstract, summary, discussion and conclusion sections. Proposed changes were revised and agreed by the JWG members.

¹ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

³ <https://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wq-biohaz-jointwqsdatacollection.pdf>



The Technical Report will be submitted for approval and clearance at EFSA and ECDC after the meeting. If additional changes will be implemented following EFSA and/or ECDC clearance, the JWG will be consulted about them via written procedure before submitting the report to the EC (30 April 2019).

As agreed in the 13th meeting of the JWG, the selection of suitable scenarios will be done afterwards by EFSA and ECDC considering the scientific and technical information provided by the JWG and additional strategic elements.

6. Next meeting(s)

No more meetings are planned for this joint working group.



Annex

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting

With regard to this meeting, Dr. Eva Litrup declared the following interest: being participant of the COMPARE project (www.compare.org). In accordance with EFSA's Policy on Independence⁴ and the Decision of the Executive Director on Competing Interest Management⁵, and taking into account the specific matters discussed at the meeting in question, the interest above was not deemed to represent a Conflict of Interest for the expert concerned.

With regard to this meeting, Dr. João Carriço declared the following interest: being participant of the INNUENDO project (www.innuendoweb.org) and being one of the developers of the INNUENDO Platform. He also declared being member of the IRIDA team (<http://www.irida.ca/people/>). In accordance with EFSA's Policy on Independence⁴ and the Decision of the Executive Director on Competing Interest Management⁵, and taking into account the specific matters discussed at the meeting in question, the interest above was deemed to represent a Conflict of Interest (CoI).

This results in the exclusion of the expert Dr. João Carriço from any discussion, voting or other processing of the INNUENDO and IRIDA solutions by the concerned scientific group.

⁴ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

⁵ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf



BICONTAM UNIT

MINUTES OF THE 14TH MEETING OF THE WORKING GROUP ON "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held by WEB on 29 March 2019

(Agreed on 5 April 2019)

Participants

■ Working Group Members:

João André Carriço

Eva Litrup

Michel-Yves Mistou

Joël Mossong

Stefano Morabito

■ EFSA:

BIOCONTAM Unit: Valentina Rizzi (Chair), Beatriz Guerra (secretariat)

DTS Unit: Giancarlo Costa

■ Others:

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Vitor Borges, Guy Cochrane, Eelco Franz, Renata Karpíšková

ECDC Staff:

Ivo Van Walle (co-chair, secretariat), Erik Alm, Saara Kotila.



1. Welcome and apologies for absence

The Chair welcomed the participants.

Apologies were received from Tim Dallman (ECDC expert), Chiara Bianchi, Luca Pasinato and Federica Barrucci (EFSA), Daniel Palm, Marc Struelens (ECDC), Pamina Suzuki and Martial Plantady (DG SANTE G4), Margherita Fanos (DG SANTE, C3).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence¹ and the Decision of the Executive Director on Competing Interest Management,² EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process.

Certain interests were declared orally by the members before the beginning of the meeting. For further details on the outcome of the screening of the Oral Declarations of Interest made at the beginning of the meeting, please refer to the Annex.

4. Agreement of the minutes of the 12th Working Group meeting held on 21-22 February 2019, Brussels.

The minutes of the 13th Working Group meeting held on 21-22 February 2019 were agreed by written procedure on 18 March 2019.³

5. Scientific topics for discussion

5.1. Draft Technical Report

EFSA and ECDC explained the main changes implemented in the report. These affected mainly the sections methodology, assessment of single solutions and combinations. New tables have been included: table on total numbers of requirements met by each solution, one on identified significant weaknesses of each solution for different areas of functionality, another one on limitations on how different solutions can be combined to meet the constraints. A summary of the information gathered from the consultation to ECDC FWD-Network and the EFSA Zoonoses Monitoring Networks has been also added.

¹ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

³ <https://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wq-biohaz-jointwgsdatacollection.pdf>



Regarding the 'Discussion and conclusions', the JWG agreed on the structure. Proposed conclusions were revised and agreed by the JWG members. No section on recommendations will be included in the report, but the next steps will be drafted and included in the 'Discussion and conclusions' section.

As agreed in the 13th meeting of the JWG, the selection of scenarios will be done afterwards by EFSA and ECDC considering the scientific and technical information provided by the JWG and additional strategic elements.

6. Next meeting(s)

The 15th and last meeting, web-conference, will be held on 9 April.



Annex

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting

With regard to this meeting, Dr. Eva Litrup declared the following interest: being participant of the COMPARE project (www.compare.org). In accordance with EFSA's Policy on Independence⁴ and the Decision of the Executive Director on Competing Interest Management⁵, and taking into account the specific matters discussed at the meeting in question, the interest above was not deemed to represent a Conflict of Interest for the expert concerned.

With regard to this meeting, Dr. João Carriço declared the following interest: being participant of the INNUENDO project (www.innuendoweb.org) and being one of the developers of the INNUENDO Platform. He also declared being member of the IRIDA team (<http://www.irida.ca/people/>). In accordance with EFSA's Policy on Independence⁴ and the Decision of the Executive Director on Competing Interest Management⁵, and taking into account the specific matters discussed at the meeting in question, the interest above was deemed to represent a Conflict of Interest (CoI).

This results in the exclusion of the expert Dr. João Carriço from any discussion, voting or other processing of the INNUENDO and IRIDA solutions by the concerned scientific group.

⁴ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

⁵ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf



BIOCONTAM UNIT

MINUTES OF THE 13TH MEETING OF THE WORKING GROUP ON "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held on 21-22 February 2019, Brussels

(Agreed on 18 March 2019)

Participants

■ Working Group Members:

João André Carriço

Eva Litrup

Michel-Yves Mistou

Joël Mossong

Stefano Morabito

■ European Commission and/or Member States representatives:

Eric Thevenard ((DG SANTE G4) on 21st (partially)

Pamina Suzuki (DG SANTE G4) on 22nd

Margherita Fanos (DG SANTE, C3) on 21st

Laura Jansen (DG SANTE C3, trainee) on 21st

■ EFSA:

BIOCONTAM Unit: Valentina Rizzi (Chair), Beatriz Guerra (secretariat)

AMU Unit: Federica Barrucci

DTS Unit: Giancarlo Costa, Chiara Bianchi (back up)

DATA Unit: Luca Pasinato

■ Others:

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.



ECDC Working Group Members attending:

Vitor Borges, Guy Cochrane, Tim Dallman, Eelco Franz

ECDC Staff:

Ivo Van Walle (co-chair, secretariat), Erik Alm, Saara Kotila, Daniel Palm, Marc Struelens.

1. Welcome and apologies for absence

The Chair welcomed the participants.

Apologies were received from Renata Karpíšková (ECDC expert) and Martial Plantady (DG SANTE G4).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence¹ and the Decision of the Executive Director on Competing Interest Management,² EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process.

Certain interests were declared orally by the members before the beginning of the meeting. For further details on the outcome of the screening of the Oral Declarations of Interest made at the beginning of the meeting, please refer to the Annex.

4. Agreement of the minutes of the 12th Working Group meeting held on 25 January 2019, WEB-conference.

The minutes of the 12th Working Group meeting held on 25 January 2019 were agreed by written procedure on 4th February 2019.³

5. Scientific topics for discussion

¹ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

³ <https://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wq-biohaz-jointwgsdatacollection.pdf>



5.1. Draft Technical Report

EFSA and ECDC explained the changes (mainly amendments, new text in methodology section) implemented in the report. Comments from the consultation with the Steering Committee for the ECDC-EFSA Molecular Typing database, as well from the EC EURLs WGS WG were addressed in the document.

Consultation with the ECDC FWD-Network and the EFSA Zoonoses Monitoring Network is planned.

5.2. Requirements vs. Solutions assessment (mapping matrix)

After the 12th JWG WGS meeting, the assessment done by the JWG for the requirements met/not met by each solution (status as of 31 December) were shared with all specific hearing experts. They were asked to provide their feed-back on the assessment, indicate discrepancies compared to the actual development of each solution (if any) and provide evidence for changes needed. The feed-back received for INNUENDO, COMPARE, Bionumerics, EnteroBase and BigsDB solutions was discussed during the present meeting (SeqSphere and Pathogenwatch feed-back were not received before the meeting), and amendments were done according to the judgment of the JWG experts. The JWG agreed that ENA and CGE assessments should be done separately from COMPARE as not all functionalities offered by the single solutions were included in the COMPARE Platform, and if needed the hearing experts should be consulted.

5.3. Scenarios

The assessment done so far showed that no individual existing solution meet all critical requirements and/or constraints, and this implicates the need for combination of several solutions and/or further development to define possible scenarios. However, due to the number of factors influencing this selection (many scenarios suitable from the scientific point of view, lack of deep knowledge about the remaining work needed for meeting the unmet requirements and for integration with other solutions, feasibility of their development/implementation depending on the possibility/capacity to solve the problems/gaps that are beyond the control of the WG), and the uncertainty on how other elements (e.g. strategic, political, etc) will impact on the overall picture, the experts decided not to propose any scenarios but to provide the assessment of the scientific/technical properties of each solution. In addition, an overview of the main weaknesses of each solution for different areas of functionality will be given, together with limitations on how they can be combined and meet the constraints.

The selection of scenarios should be done afterwards by EFSA and ECDC taking into account the information provided by the JWG and additional strategic elements. .

6. Next meeting(s)

The 14th meeting, web-conference, will be held on 29 March. If needed, a 15th meeting, (if needed), web-conference, has been scheduled for 9 April.



Annex

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting

With regard to this meeting, Dr. Eva Litrup declared the following interest: being participant of the COMPARE project (www.compare.org). In accordance with EFSA's Policy on Independence⁴ and the Decision of the Executive Director on Competing Interest Management⁵, and taking into account the specific matters discussed at the meeting in question, the interest above was not deemed to represent a Conflict of Interest for the expert concerned.

With regard to this meeting, Dr. João Carriço declared the following interest: being participant of the INNUENDO project (www.innuendoweb.org) and being one of the developers of the INNUENDO Platform. He also declared being member of the IRIDA team (<http://www.irida.ca/people/>). In accordance with EFSA's Policy on Independence⁴ and the Decision of the Executive Director on Competing Interest Management⁵, and taking into account the specific matters discussed at the meeting in question, the interest above was deemed to represent a Conflict of Interest (CoI).

This results in the exclusion of the expert Dr. João Carriço from any discussion, voting or other processing of the INNUENDO and IRIDA solutions by the concerned scientific group.

⁴ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

⁵ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

BIOLOGICAL HAZARDS AND CONTAMINANTS

Minutes of the 12th meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held by Web-conference, 25 January 2019

(Agreed on 4 February 2018)

Participants

- **Working Group Members:**

João André Carriço

Eva Litrup (partially)

Stefano Morabito (partially)

Joël Mossong

- **European Commission and/or Member States representatives**

Margherita Fanos (EC DG SANTE C3) (partially)

- **EFSA:**

BIOCONTAM Unit: Valentina Rizzi (co-chair, secretariat), Iolanda Mangone (observer); DTS Unit: Giancarlo Costa, Chiara Bianchi (back up), AMU Unit: Federica Barrucci.

- **Others:**

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Guy Cochrane, Eelco Franz (partially), Tim Dallman (partially).

ECDC Staff:

Ivo Van Walle (co-chair, secretariat), Erik Alm, Marc Struelens, Saara Kotila, Daniel Palm.

1. Welcome and apologies for absence

The Chairs welcomed the participants.

Apologies were received from Michel-Yves Mistou (EFSA JWG member); Vitor Borges (ECDC JWG member), Renata Karpíšková (ECDC JWG member), Martial Plantady (EC DG SANTE G4, temporarily substituting P. Suzuki), Luca Pasinato, and Beatriz Guerra.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence¹ and the Decision of the Executive Director on Competing Interest Management², EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process.

Certain interests were declared orally by the members before the beginning of the meeting. For further details on the outcome of the screening of the Oral Declarations of Interest made at the beginning of the meeting, please refer to the Annex.

4. Agreement of the minutes of the 11th Working Group meeting held on 11 December by Web-conference.

The minutes of the 11th Working Group meeting held on 11 December were agreed on 21 December.³

¹ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

³ <https://www.efsa.europa.eu/sites/default/files/wgs/biological-hazards/wg-biohaz-jointwgsdatacollection.pdf>

5. Scientific topic

5.1. Draft Technical Report

EFSA and ECDC explained the changes (introduction of new text, amendments) implemented in the report. These affected mainly the 'Data and methodologies section'.

5.2. Mapping of existing "solutions" (available systems/pipelines) with requirements for collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database

In preparation of the meeting, the feedback received from the hearing experts had been evaluated and integrated in the assessment of the solutions. At the present meeting the discussion covered only the requirements for which the assessment was still pending/ unclear.

The feedback received from ECDC and EFSA's Legal units was presented and summarised: non-anonymised and pseudonymised data are considered personal data; the need for an audit trail for the analyses performed was identified.

A new table to summarize the information on the different solutions was presented. A table to identify the risks associated to each solution and the relative mitigation actions were presented.

The proposed approach to assess the gaps was also discussed. Each solution matches each subset of requirements only partially, and the remaining (critical) requirements that are not met form a gap. This gap represents the development/set-up resources that are still needed to get to the desired system, and thus an estimate of these resources for each gap should be made. Two examples of scenarios were also presented.

5.3. Consultation

The plan for the consultation of the relevant stakeholders was agreed.

6. Next meetings

For 2019, other three meetings have been scheduled. The 13th meeting, physical, will be held in Brussels on 21-22 February. 14th meeting, web-conference, will be held on 29 March. 15th meeting (if needed), web-conference, has been scheduled for 9 April.

Annex

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting:

With regard to this meeting, Dr. Eva Litrup declared the following interest: being participant of the COMPARE project (www.compare.org). In accordance with EFSA's Policy on Independence⁴ and the Decision of the Executive Director on Competing Interest Management⁵, and taking into account the specific matters discussed at the meeting in question, the interest above was not deemed to represent a Conflict of Interest for the expert concerned.

With regard to this meeting, Dr. João Carriço declared the following interest: being participant of the INNUENDO project (www.innuendoweb.org), and being one of the developers of the INNUENDO Platform. He also declared being member of the IRIDA team (<http://www.irida.ca/people/>). In accordance with EFSA's Policy on Independence⁴ and the Decision of the Executive Director on Competing Interest Management⁵, and taking into account the specific matters discussed at the meeting in question, the interest above was deemed to represent a Conflict of Interest (CoI).

This results in the exclusion of the expert Dr. João Carriço from any discussion, voting or other processing of the INNUENDO and IRIDA solutions by the concerned scientific group.

⁴ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

⁵ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

Minutes of the 11th meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held by Web-conference, 11 December 2018

(Agreed on 21 December 2018)

Participants

- **Working Group Members:**

João André Carriço

Eva Litrup

Michel-Yves Mistou (partially)

Joël Mossong

- **European Commission and/or Member States representatives**

Margherita Fanos (EC DG SANTE C3) (partially)

- **EFSA:**

BIOCONTAM Unit: Valentina Rizzi (co-chair), Beatriz Guerra Román (secretariat), Iolanda Mangone (observer); DTS Unit: Chiara Bianchi (back up), AMU Unit: Federica Barrucci (partially).

- **Others:**

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Vitor Borges, Guy Cochrane (partially), Tim Dallman, Renata Karpíšková

ECDC Staff:

Ivo Van Walle (co-chair, secretariat), Erik Alm, Marc Struelens.

1. Welcome and apologies for absence

The Chairs welcomed the participants.

Apologies were received from Stefano Morabito (EFSA JWG member); Eelco Franz (ECDC JWG member); Saara Kotila, Daniel Palm (ECDC); Giancarlo Costa, Luca Pasinato; Martial Plantady (EC DG SANTE G4, temporarily substituting P. Suzuki).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence¹ and the Decision of the Executive Director on Competing Interest Management², EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process.

Certain interests were declared orally by the members before the beginning of the meeting. For further details on the outcome of the screening of the Oral Declarations of Interest made at the beginning of the meeting, please refer to the Annex.

4. Agreement of the minutes of the 10th Working Group meeting held on 26 November by Web-conference.

The minutes of the 10thth Working Group meeting held on 26 November were agreed on 11 November.³

5. Scientific topic

5.1. Draft Technical Report

¹ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

³ <https://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-biohaz-jointwgsdatacollection.pdf>

EFSA and ECDC explained the changes -introduction of new text, revision-done in the report. These affected mainly the Interpretation of Terms of Reference, update current molecular systems, and introduction of new tables to summarize the information on the different solutions, as well as identify the risks associated to each solution.

5.2. Consultation ECDC and EFSA Legal departments

Questions drafted by ECDC and ECDC JWG members to consult their respective legal departments were shared with the JWG experts. Questions were amended following comments from the experts

5.3. Mapping of existing "solutions" (available systems/pipelines) with requirements for collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database⁴

Before the present meeting the mapping (assessment) of the solutions INNUENDO, COMPARE, Bionumerics, SeqSphere, Pathogenwatch, Enterobase and BigsDB against the requirements identified by the JWG for the collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database was completed. Open questions/doubts were revised and most of them solved during the meeting. Further questions answers identified for all the solutions evaluated so far will be shared with the hearing experts for their final revision and validation by end December 2018.

Different graphic forms representing the assessment done (data collection, data analysis, general and infrastructure) were shown and discussed with the JWG experts.

6. Next meetings

For 2019, four meetings have been scheduled. The 12th meeting will be held by web-conference on 25 January. 13th meeting, physical, will be held in Brussels on 21-22 February. 14th meeting, web-conference, will be held on 29 March. 15th meeting (if needed), web-conference, has been scheduled for 9 April.

⁴ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2017-00397>

Annex

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting:

With regard to this meeting, Dr. Eva Litrup and Michel-Yves Mistou declared the following interest: being participant of the COMPARE project (www.compare.org). In accordance with EFSA's Policy on Independence⁵ and the Decision of the Executive Director on Competing Interest Management⁶, and taking into account the specific matters discussed at the meeting in question, the interest above was not deemed to represent a Conflict of Interest for the experts concerned.

With regard to this meeting, Dr. João Carriço declared the following interest: being participant of the INNUENDO project (www.innuendoweb.org), and being one of the developers of the INNUENDO Platform. He also declared being member of the IRIDA team (<http://www.irida.ca/people/>). In accordance with EFSA's Policy on Independence⁵ and the Decision of the Executive Director on Competing Interest Management⁶, and taking into account the specific matters discussed at the meeting in question, the interest above was deemed to represent a Conflict of Interest (CoI).

This results in the exclusion of the expert Dr. João Carriço from any discussion, voting or other processing of the INNUENDO and IRIDA solutions by the concerned scientific group.

⁵ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

⁶

http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

Minutes of the 10th meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held by Web-conference, 26 November 2018

(Agreed on 11 November 2018)

Participants

- **Working Group Members:**

João André Carriço

Stefano Morabito

- **Hearing Experts¹:**

Thomas Matthews

- **European Commission and/or Member States representatives**

Margherita Fanos (EC DG SANTE C3) (partially)

- **EFSA:**

BIOCONTAM Unit: Valentina Rizzi (co-chair), Beatriz Guerra Román (secretariat); DTS Unit: Chiara Bianchi (back up).

- **Others:**

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Vitor Borges, Guy Cochrane

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work: <http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

ECDC Staff:

Ivo Van Walle (co-chair, secretariat), Erik Alm

1. Welcome and apologies for absence

The Chairs welcomed the participants.

Apologies were received from Eva Litrup, Michel-Yves Mistou, and Jöel Mossong (EFSA JWG members); Eelco Franz, Tim Dallman, Renata Karpíšková (ECDC JWG members); Saara Kotila, Daniel Palm, Marc Struelens (ECDC); Federica Barrucci, Giancarlo Costa, Luca Pasinato Iolanda Mangone (EFSA); Martial Plantady (EC DG SANTE G4, temporarily substituting P. Suzuki).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process.

Certain interests were declared orally by the members before the beginning of the meeting. For further details on the outcome of the screening of the Oral Declarations of Interest made at the beginning of the meeting, please refer to the Annex.

4. Agreement of the minutes of the 9th Working Group meeting held on 19 November by Web-conference.

The minutes of the 9thth Working Group meeting held on 19 November were agreed on 26 November.⁴

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <https://www.efsa.europa.eu/sites/default/files/wgs/biological-hazards/wg-biohaz-jointwgsdatacollection.pdf>

5. Hearing Experts

Dr. Thomas Matthews, National Microbiology Laboratory – Public Health Agency of Canada (NML-PHAC), was invited to present IRIDA (<http://www.irida.ca>)

6. Scientific topic

6.1. Mapping of existing “solutions” (available systems/pipelines) with requirements for collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database⁵

During the previous meetings the solutions INNUENDO, COMPARE, Bionumerics, SeqSphere, Pathogenwatch, Enterobase and BigsDB have been mapped against the requirements identified by the JWG for the collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database.

In the present meeting, the invited hearing expert Dr. Thomas Matthews presented the Solution IRIDA and answered technical questions identified by the JWG (previously shared with him) and follow up questions. The answers provided by the hearing expert will be assessed by the JWG.

New questions /unclear answers identified for all the solutions evaluated so far will be shared with the hearing experts for their final revision and validation by end December 2018.

7. Next meetings

The 11th meeting (Web-conference) is scheduled for 11 December.

For 2019, one physical meeting will be held in Brussels on 21-22 February. One web-conference meeting will be held on 29 March. Additional web-conferences will be scheduled for January and April.

Annex

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting:

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2017-00397>

With regard to this meeting, Dr. João Carriço declared the following interest: being member of the IRIDA team (<http://www.irida.ca/people/>). In accordance with EFSA's Policy on Independence **Error! Bookmark not defined.** and the Decision of the Executive Director on Competing Interest Management **Error! Bookmark not defined.**, and taking into account the specific matters discussed at the meeting in question, the interest above was deemed to represent a Conflict of Interest (CoI).

This results in the exclusion of the expert Dr. João Carriço from any discussion, voting or other processing of the IRIDA solution by the concerned scientific group.

Minutes of the 9th meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held by Web-conference, 19 November 2018

(Agreed on 26 November 2018)

Participants

- **Working Group Members:**

Eva Litrup

Jöel Mossong

- **Hearing Experts¹:**

Mark Achtman

Keith Jolley

- **EFSA:**

BIOCONTAM Unit: Valentina Rizzi (co-chair), Beatriz Guerra Román (secretariat), Iolanda Mangone (observer); AMU Unit: Federica Barrucci; DTS Unit: Giancarlo Costa (partly) and Chiara Bianchi (back up).

- **Others:**

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Tim Dallman, Renata Karpíšková

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work: <http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

ECDC Staff:

Ivo Van Walle (co-chair, secretariat), Erik Alm, Saara Kotila, Daniel Palm.

1. Welcome and apologies for absence

The Chairs welcomed the participants.

Apologies were received from João André Carriço, Michel-Yves Mistou and Stefano Morabito (EFSA JWG members), Vitor Borges, Guy Cochrane and Eelco Franz (ECDC JWG members), Marc Struelens (ECDC), Luca Pasinato (EFSA), Martial Plantady (EC DG SANTE G4, temporarily substituting P. Suzuki), and Margherita Fanos (EC DG SANTE C3).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 8th Working Group meeting held on 17 September by Web-conference.

The minutes of the 8th Working Group meeting held on 25-26 October were agreed on 19 November.⁴

5. Hearing Experts

Dr. Mark Achtman, from the University of Warwick, was invited to present Enterobase (<https://enterobase.warwick.ac.uk/>).

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <https://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-biohaz-jointwgsdatacollection.pdf>

Dr. Keith Jolley, from the University of Oxford was invited to present BIGSdb (<https://pubmlst.org/software/database/bigfdb/>).

6. Scientific topic

6.1. Mapping of existing “solutions” (available systems/pipelines) with requirements for collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database⁵

During the previous meetings the solutions INNUENDO, COMPARE, Bionumerics, SeqSphere and Pathogenwatch have been mapped against the requirements identified by the JWG for the collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database.

In the present meeting, the invited hearing experts Dr. Mark Achtman and Dr. Keith Jolley presented the solutions EnteroBase and BIGSdb, respectively, and answered technical questions identified by the JWG (previously shared with him) and follow up questions. The answers provided by the hearing experts will be assessed by the JWG.

New questions /unclear answers identified for all the solutions evaluated so far will be shared with the hearing experts for their final revision and validation by end December 2018.

7. Next meetings

The 10th meeting (expert hearing - Web-conference) is scheduled for 26 November.

The 11th meeting (Web-conference) is scheduled for 11 December.

For 2019, one physical meeting will be held in Brussels on 21-22 February. One web-conference meeting will be held on 29 March. Additional web-conferences will be scheduled for January and April.

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2017-00397>

Minutes of the 8th meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held on 25-26 October, Stockholm

(Agreed on 19 November 2018)

Participants

- **Working Group Members:**

João André Carriço

Eva Litrup

Michel-Yves Mistou

Stefano Morabito

Joël Mossong

- **Hearing Experts¹:**

David Aanensen

- **EFSA:**

BIOCONTAM Unit: Valentina Rizzi (co-chair), Beatriz Guerra Román (secretariat), Iolanda Mangone (observer, via Web); DTS Unit: Chiara Bianchi, Giancarlo Costa (26.10, via Web); AMU Unit: Federica Barrucci (26.10, via Web); DATA Unit: Luca Pasinato (via Web).

- **Others:**

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Vitor Borges, Guy Cochrane, Tim Dallman, Renata Karpíšková, Eelco Franz

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work: <http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

ECDC Staff:

Ivo Van Walle (co-chair, secretariat), Erik Alm, Saara Kotila, Daniel Palm.

1. Welcome and apologies for absence

The Chairs welcomed the participants.

Apologies were received from Marc Struelens (ECDC), Martial Plantady (EC DG SANTE G4, temporarily substituting P. Suzuki), and Margherita Fanos (EC DG SANTE C3).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process.

Certain interests were declared orally by the members before the beginning of the meeting. For further details on the outcome of the screening of the Oral Declarations of Interest made at the beginning of the meeting, please refer to the Annex.

4. Agreement of the minutes of the 7th Working Group meeting held on 1 October 2018 by Web-conference.

The minutes of the 7th Working Group meeting held on 1 October 2018 were agreed on 16 October July.⁴

5. Hearing Experts

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <https://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-biohaz-jointwgsdatacollection.pdf>

Dr. David Aanensen, from the Centre for Genomic Pathogen Surveillance, Wellcome Trust Institute, was invited to present Pathogenwatch.

6. Scientific topic

6.1. Revision of the Solutions matrix (solution vs. requirements).

During the previous meetings the solutions INNUENDO, COMPARE, Bionumerics, and SeqSphere have been mapped against the requirements identified by the JWG for the collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database. The mapping for those four solutions was jointly revised by the JWG during the meeting.

In the present meeting, the invited hearing expert Dr. David Aanensen presented the solution Pathogenwatch and answered technical questions identified by the JWG (previously shared with him) and follow up questions. The answers provided by the hearing expert will be assessed by the JWG.

It was agreed that the mapping done for the solutions will be revised, and further hearing experts will be invited to join via Web to the next meetings (19 and 26 November, Web-conferences).

New questions /unclear answers identified for all the solutions evaluated so far will be shared with the hearing experts for their final revision and validation by end December 2018.

It was agreed that the final assessment of all solutions (about the fulfilment of requirements) will be done with the status of development of the different solutions (platforms/tools implemented) at 31 December 2018.

6.2. Review Draft Technical Report

EFSA and ECDC provided further information on the current Joint ECDC-EFSA Molecular Typing database (collection of PFGE and MLVA data): architecture, data flow, data collected, access rules. ECDC informed on the planned upgrading of TESSy.

The JWG discussed the need for changes on certain requirements (wording, categorization as critical/medium/level), revision of constraints, legal advice, and harmonization of information provided by the different solutions.

7. Next meetings

The 9th meeting (experts hearing - Web-conference) is scheduled for 19 November.

The 10th meeting (experts hearing - Web-conference) is scheduled for 26 November.

The 11th meeting (Web-conference) is scheduled for 11 December.

For 2019, one physical meeting will be held in Brussels on 21-22 February. One web-conference meeting will be held on 29 March. Additional web-conferences will be scheduled for January and April.

Annex

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting:

With regard to this meeting, Dr. Eva Litrup and Michel-Yves Mistou declared the following interest: being participant of the COMPARE project (www.compare.org). In accordance with EFSA's Policy on Independence⁵ and the Decision of the Executive Director on Competing Interest Management⁶, and taking into account the specific matters discussed at the meeting in question, the interest above was not deemed to represent a Conflict of Interest for the experts concerned.

With regard to this meeting, Dr. João Carriço declared the following interest: being participant of the INNUENDO project (www.innuendoweb.org), and being one of the developers of the INNUENDO Platform. In accordance with EFSA's Policy on Independence⁵ and the Decision of the Executive Director on Competing Interest Management⁶, and taking into account the specific matters discussed at the meeting in question, the interest above was deemed to represent a Conflict of Interest (CoI).

This results in the exclusion of the expert Dr. João Carriço from any discussion, voting or other processing of the INNUENDO solution by the concerned scientific group.

⁵ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

⁶

http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

Minutes of the 7th meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held by Web-conference, 1 October 2018

(Agreed on 16 October 2018)

Participants

- **Working Group Members:**

João André Carriço

Eva Litrup

Michel-Yves Mistou

Stefano Morabito

- **Hearing Experts¹:**

Dag Hamsen

Hannes Pouseele

- **EFSA:**

BIOCONTAM Unit: Valentina Rizzi (co-chair), Beatriz Guerra Román (secretariat), Iolanda Mangone (observer); AMU Unit: Federica Barrucci; DTS Unit: Giancarlo Costa and Chiara Bianchi (back up).

- **Others:**

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Vitor Borges, Renata Karpíšková, Eelco Franz

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work: <http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

ECDC Staff:

Ivo Van Walle (co-chair, secretariat), Erik Alm, Saara Kotila, Daniel Palm, Marc Struelens.

1. Welcome and apologies for absence

The Chairs welcomed the participants.

Apologies were received from Joël Mossong (EFSA JWG member), Tim Dallman and Guy Cochrane (ECDC JWG members), Martial Plantady (EC DG SANTE G4, temporarily substituting Pamina Suzuki).

The chairs informed that Aisha Sauer (former EC DG-SANTE C3) has changed her position; Margherita Fanos will be in cc in all communications about the JWG until the replacement is officially nominated.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 6th Working Group meeting held on 17 September by Web-conference.

The minutes of the 6th Working Group meeting held on 17 September 2018 were agreed on 2 October.⁴

5. Hearing Experts

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <https://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wq-biohaz-jointwgsdatacollection.pdf>

Dr. Dag Harmsen was invited to present SeqSphere+ (Ridom GmbH).

Dr. Hannes Pouseele was invited to present Bionumerics (Applied Maths, Biomerieux).

6. Scientific topic

6.1. Mapping of existing “solutions” (available systems/pipelines) with requirements for collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database⁵

A similar exercise as done for INNUENDO and COMPARE in previous meetings was done for other identified existing solutions. These solutions have been mapped against the requirements identified by the JWG for the collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database. In this case, the invited hearing experts Dr. Dag Harmsen and Dr. Hannes Pouseele presented SeqSphere (Ridom GmbH) and Bionumerics (Applied Maths, Biomerieux), respectively, and answered technical questions identified by the JWG (previously shared with them). The answers provided will be assessed by the JWG. Unclear questions will be clarified to allow these hearing experts to revise/ validate their answers.

The mapping done for other solutions such as PathogenWatch (former WGSA), Enterobase and BigsDB will be discussed in next meetings, and hearing experts for those solutions will be invited to join via Web to the next meetings (October in Stockholm and November Web-conference).

7. Next meetings

The 8th meeting (physical meeting) will be held in Stockholm on 25-26 October.

The 9th meeting (experts hearing - Web-conference) is scheduled for 19 November.

The 10th meeting (Web-conference) is scheduled for 11 December.

For 2019, one physical meeting will be held in Brussels on 21-22 February. One web-conference meeting will be held on 29 March. An additional web-conference will be scheduled for January.

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2017-00397>

Minutes of the 6th meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held by Web-conference, 17 September 2018

(Agreed on 02 October 2018¹, revision agreed on 19 November)

Participants

- **Working Group Members:**

João André Carriço
Eva Litrup
Michel-Yves Mistou
Stefano Morabito
Joël Mossong

- **EFSA:**

BIOCONTAM Unit: Valentina Rizzi (co-chair), Beatriz Guerra Román (secretariat), Iolanda Mangone (observer); AMU Unit: Federica Barrucci; DTS Unit, Giancarlo Costa and Chiara Bianchi (back up).

- **Others:**

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Vitor Borges, Renata Karpíšková, Eelco Franz (partly)

ECDC Staff:

Ivo Van Walle (co-chair, secretariat), Erik Alm, Saara Kotila, Daniel Palm, Marc Struelens (partly).

¹ Section 3 and revision of Annex

1. Welcome and apologies for absence

The Chairs welcomed the participants.

Apologies were received from Tim Dallman and Guy Cochrane (ECDC WG members), Martial Plantady (EC DG SANTE G4, temporarily substituting P. Suzuki), and Aisha Sauer (EC DG SANTE C3), Luca Pasinato (EFSA DATA Unit).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process.

Certain interests were declared orally by the members before the beginning of the meeting. For further details on the outcome of the screening of the Oral Declarations of Interest made at the beginning of the meeting, please refer to the Annex.

4. Agreement of the minutes of the 5th Working Group meeting held on 19-20 June 2018, Parma.

The minutes of the 5th Working Group meeting held on 19-20 June 2018 were agreed on 10 July.⁴

The declarations of interest by the experts and their screening by EFSA, as included in the Annex of the present minutes, were done at the 5th Working Group meeting held in Parma; but by mistake were not included

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <https://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-biohaz-jointwgsdatacollection.pdf>

in the previous published minutes. The minutes were amended (section 3 and Annex) and agreed on 2 October and republished.

Declaration of interest from the ECDC experts are revised by ECDC and will not be included in the EFSA minutes. Thus, a correction in the Annex of the published minutes was done, and after agreement on 19 November, they were republished.

5. Scientific topic

5.1. Draft Technical Report

EFSA and ECDC explained the changes -introduction of new text- done in the report during the summer break. These affected mainly the Interpretation of Terms of Reference, Glossary, Joint analysis of ECDC and EFSA WGS Capacity Reports (answer to ToR1) and information on the current joint molecular typing database.

5.2. Revision of the mapping matrix (solution vs. requirements).

A similar exercise as done for INNUENDO and COMPARE in previous meetings was done for other identified existing solutions. In this case, the exercise done by some experts to map the identified requirements with the existing solutions Bionumerics (Applied Maths, Biomerieux) and SeqSphere (Ridom GmbH) was revised. Questions to be done to hearing experts who shall provide technical information on those solutions were identified. Hearing experts will be invited to present these solutions in an additional JWG meeting (Web). The mapping done for other solution such as PathogenWatch (former WGSA), Enterobase and BigsDB will be revised in next meetings and hearing experts for those solutions will be selected.

6. Next meetings

The 7th meeting (experts hearing - Web-conference) will be held on 1 October.

The 8th meeting (physical meeting) will be held in Stockholm on 25-26 October.

The 9th meeting (experts hearing - Web-conference) is scheduled for 19 November.

The 10th meeting (Web-conference) is scheduled for 11 December.

For 2019, one physical meeting will be held in Brussels on 20-21 February. One web-conference meeting will be held on 29 March. An additional web-conference will be scheduled for January.

Annex

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting

With regard to this meeting, Dr. Eva Litrup and Michel-Yves Mistou declared the following interest: being participant of the COMPARE project (www.compare.org). In accordance with EFSA's Policy on Independence⁵ and the Decision of the Executive Director on Competing Interest Management⁶, and taking into account the specific matters discussed at the meeting in question, the interest above was not deemed to represent a Conflict of Interest for the experts concerned.

With regard to this meeting, Dr. João Carriço declared the following interest: being participant of the INNUENDO project, and being one of the developers of the INNUENDO Platform. In accordance with EFSA's Policy on Independence⁵ and the Decision of the Executive Director on Competing Interest Management⁶, and taking into account the specific matters discussed at the meeting in question, the interest above was deemed to represent a Conflict of Interest (CoI).

This results in the exclusion of the expert Dr. João Carriço from any discussion, voting or other processing of INNUENDO solution by the concerned scientific group.

⁵ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

⁶

http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

Minutes of the 5th meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held on 19-20 June 2018, Parma

**(Agreed on 10 July 2018, revision agreed on 2 October¹, 2nd
revision agreed on 19 November²)**

Participants

- **Working Group Members:**

João André Carrigo

Eva Litrup

Michel-Yves Mistou

Stefano Morabito

Joël Mossong

- **Hearing Experts³:**

Clara Amid (European Bioinformatics Institute, EBI)

Mirko Rossi (University of Helsinki, UH)

Ole Lund (Danish Technical University, DTU)

- **European Commission and/or Member States representatives:**

Aisha Sauer (DG SANTE C3)

- **EFSA:**

BIOCONTAM Unit: Beatriz Guerra Román, Valentina Rizzi (co-chair), Federica Barrucci (AMU Unit), Chiara Bianchi (DTS Unit), Iolanda Mangone (BIOCONTAM Unit, observer), Daniel Thomas-Lopez (BIOCONTAM Unit, observer).

¹ Section 3 and inclusion of Annex

² Section 3 and revision of Annex

³ As defined in Article 17 of the Decision of the Executive Director on the selection of external experts:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

- **Others:**

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Vitor Borges, Renata Karpíšková, Tim Dallman

ECDC Staff:

Ivo Van Walle (co-chair) and Saara Kotila, Joana Revez (TC), Erik Alm (TC) and Daniel Palm (partially TC).

1. Welcome and apologies for absence

The Chairs welcomed the participants.

Apologies were received from Eelco Franz, Guy Cochrane (ECDC WG members), Pamina Suzuki and Ettore Amato (DG SANTE G4). Giancarlo Costa (EFSA DTS Unit, back up), Luca Pasinato (EFSA DATA Unit).

Erik Alm, from ECDC was presented as a new member of the WG.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members⁴

In accordance with EFSA's Policy on Independence⁵ and the Decision of the Executive Director on Competing Interest Management,⁶ EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process.

Certain interests were declared orally by the members before the beginning of the meeting. For further details on the outcome of the screening of the Oral Declarations of Interest made at the beginning of the meeting, please refer to the Annex.

⁴ Revised and corrected on 1 October, according to the oral declarations effectively made during the meeting.

⁵ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

⁶ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

4. Agreement of the minutes of the 4th Working Group meeting held on 3 May 2018, Web.

The minutes of the 4th Working group meeting were agreed by written procedure on 30 May 2018.⁷

Declaration of interest from the ECDC experts are revised by ECDC and will not be included in the EFSA minutes. Thus, a correction in the Annex of the republished minutes was done, and after agreement on 19 November, they were republished.

5. Scientific topic

5.1. Mapping of existing “solutions” (available systems/pipelines) with requirements for collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database⁸

EFSA and ECDC explained the process for mapping the requirements identified for the EFSA-ECDC WGS Molecular Typing system (MTS), and existing solutions (systems). Invited hearing experts presented the COMPARE and INNUENDO platforms, and answered technical questions identified by the JWG (previously shared with them). The answers provided will be revised by the JWG. Unclear questions will be clarified to allow these hearing experts the revision of their answers. Further information collected by the WG experts on other current existing solutions in the draft technical report was revised. Hearing experts will be invited to also present these solutions in an additional JWG meeting (Web).

5.2. Discussion on the current Requirements.

The Draft Technical Report had been revised by JWG expert’s sub-groups, and the main changes were discussed.

6. Next meetings

The 6th meeting will be held via WEB-conference on 17 September. The 7th will be held in Stockholm on 25-26 October. An additional Web-meeting will be held at the end of September/beginning of October for expert hearing consultation.

⁷ <https://www.efsa.europa.eu/sites/default/files/wgs/biological-hazards/wg-biohaz-jointwgsdatacollection.pdf>

⁸ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2017-00397>

An additional web-conference meeting is scheduled for 11 December 2018. For 2019, one physical meeting and one web-conference meeting will be scheduled.

Annex¹

Interests and actions resulting from the Oral Declaration of Interest done at the beginning of the meeting

With regard to this meeting, Dr. Eva Litrup and Michel-Yves Mistou declared the following interest: being participant of the COMPARE project (www.compare.org). In accordance with EFSA's Policy on Independence⁹ and the Decision of the Executive Director on Competing Interest Management¹⁰, and taking into account the specific matters discussed at the meeting in question, the interest above was not deemed to represent a Conflict of Interest for the experts concerned.

With regard to this meeting, Dr. João Carriço declared the following interest: being participant of the INNUENDO project, and being one of the developers of the INNUENDO Platform. EFSA's Policy on Independence⁹ and the Decision of the Executive Director on Competing Interest Management¹⁰, and taking into account the specific matters discussed at the meeting in question, the interest above was deemed to represent a Conflict of Interest (CoI).

This results in the exclusion of the expert Dr. João Carriço from any discussion, voting or other processing of INNUENDO solution by the concerned scientific group.

⁹ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

¹⁰

http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

Minutes of the 4th meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held by WEB-conference, 3 May 2018

(Agreed on 30 May 2018)

Participants

- **Working Group Members:**

João André Carriço

Eva Litrup

Michel-Yves Mistou

Stefano Morabito

- **Hearing Experts¹:**

Not Applicable

- **European Commission and/or Member States representatives:**

See apologies.

- **EFSA:**

BIOCONTAM Unit: Beatriz Guerra Román, Valentina Rizzi (co-chair), Federica Barrucci (AMU Unit), Chiara Bianchi (DTS Unit), Giancarlo Costa (DTS Unit), Luca Pasinato (DATA Unit), Iolanda Mangone (BIOCONTAM Unit, observer), Daniel Thomas-Lopez (BIOCONTAM Unit, observer).

- **Others:**

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

¹ As defined in Article 17 of the Decision of the Executive Director on the selection of external experts: <http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

ECDC Working Group Members attending:

Vitor Borges, Renata Karpíšková

ECDC Staff:

Ivo Van Walle (co-chair), Daniel Palm (partially).

1. Welcome and apologies for absence

The Chairs welcomed the participants.

Apologies were received from Joël Mossong (EFSA WG Member), as well as from Tim Dallman, Eelco Franz, Guy Cochrane (ECDC WG members), Aisha Sauer (DG SANTE C3), Pamina Suzuki and Ettore Amato (DG SANTE G4).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes² and the Decision of the Executive Director on Declarations of Interest³, EFSA screened the Annual Declarations of Interest and the Specific Declarations of Interest (SDoI) filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

4. Agreement of the minutes of the 3rd Working Group meeting held on 13 March 2018, Stockholm.

The minutes of the 3th Working group meeting were agreed by written procedure on 4 April 2018.⁴

² <http://www.efsa.europa.eu/en/keydocs/docs/independencepolicy.pdf>

³ <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

⁴ <https://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-biohaz-jointwgsdatacollection.pdf>

5. Scientific topic

5.1. Discussion on the requirements for the collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database⁵

First of all, EFSA and ECDC explained the logical components that should be available for the ECDC, EFSA and Joint Molecular Typing Systems. The Working Group further discussed the requirements needed for the WGS data regarding data analysis (mainly strain nomenclature). Information collected by the WG experts on current existing solutions was revised in order to identify open questions to be addressed by identified hearing experts.

The WG also discussed and agreed deadlines for future drafting of the draft report.

6. Next meetings

The 5th JWG WGS meeting will be held in Parma on 19-20 June. The 6th meeting will be held via WEB-conference on 17 September.

One additional physical meeting (end of October, Stockholm) and one web-conference meetings (December) are scheduled for 2018. One physical meeting and one web-conference meeting will be scheduled for 2019.

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2017-00397>

Minutes of the 3rd meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held on 13 March 2018, Stockholm

(Agreed on 5 April 2018)

Participants

- **Working Group Members:**

João André Carriço

Eva Litrup

Michel-Yves Mistou

Stefano Morabito

Joël Mossong

- **Hearing Experts¹:**

Not Applicable

- **European Commission and/or Member States representatives:**

Aisha Sauer (SANTE C3)

- **EFSA:**

BIOCONTAM Unit: Beatriz Guerra Román, Valentina Rizzi (co-chair).

Iolanda Mangone (BIOCONTAM Unit), Daniel Thomas-Lopez (BIOCONTAM Unit), Federica Barrucci (AMU Unit), Chiara Bianchi (DTS Unit), Giancarlo Costa (DTS Unit) and Luca Pasinato (DATA Unit) have participate via teleconference.

- **Others:**

¹ As defined in Article 17 of the Decision of the Executive Director on the selection of external experts: <http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Vitor Borges, Renata Karpíšková, Guy Cochrane

ECDC Staff:

Ivo Van Walle (co-chair), Daniel Palm, Joana Revez, Saara Kotila.

1. Welcome and apologies for absence

The Chairs welcomed the participants.

Apologies were received from Tim Dallman and Eelco Franz (ECDC WG members).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes² and the Decision of the Executive Director on Declarations of Interest³, EFSA screened the Annual Declarations of Interest and the Specific Declarations of Interest (SDoI) filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

4. Scientific topic

4.1. Discussion on the requirements for the collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database⁴

First of all, EFSA and ECDC explained the updates on the constraints of the ECDC, EFSA and Joint Molecular Typing Systems. The Working Group further discussed the requirements needed for the WGS data

² <http://www.efsa.europa.eu/en/keydocs/docs/independencepolicy.pdf>

³ <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

⁴ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2017-00397>

regarding: data collection (data submission, storage and sharing), data analysis (sequence read data quality, genome assembly, inferring genomic relationships, strain nomenclature, genome characterisation) as well as the section on general interactions and data visualization. The existing solutions will be evaluated and hearing experts will be consulted.

The WG also discussed and agreed deadlines for future drafting of the draft report.

5. Next meetings

The 3rd meeting will be held on 3 May by web-conference, and the 4th meeting will be in Parma on 19-20 June.

One additional physical meeting (end of October, Stockholm) and two web-conference meetings (in September and December) are being scheduled for 2018. One physical meeting and one web-conference meeting will be scheduled for 2019.

Minutes of the 2nd meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Web conference 22 February 2018

(Agreed on 6 March 2018)

Participants

- **Working Group Members:**

João André Carriço

Michel-Yves Mistou

Stefano Morabito

Joël Mossong

- **Hearing Experts¹:**

Not Applicable

- **European Commission and/or Member States representatives:**

Ettore Amato (SANTE G4)

Aisha Sauer (SANTE C3)

- **EFSA:**

BIOCONTAM Unit: Beatriz Guerra Román, Valentina Rizzi (co-chair),
Iolanda Mangone, Daniel Thomas-Lopez (trainee)

AMU Unit: Federica Barrucci, Alexandra Papanikolau (trainee)

DTS Unit: Chiara Bianchi, Giancarlo Costa

DATA Unit: Luca Pasinato

- **Others:**

¹ As defined in Article 17 of the Decision of the Executive Director on the selection of external experts:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members attending:

Vitor Borges, Tim Dallman, Renata Karpíšková, Eelco Franz

ECDC Staff:

Ivo Van Walle (co-chair), Daniel Palm, Joana Revez, Saara Kotila.

1. Welcome and apologies for absence

The Chairs welcomed the participants.

Apologies were received from Eva Litrup (EFSA WG) and Guy Cochrane (ECDC WG member).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes² and the Decision of the Executive Director on Declarations of Interest³, EFSA screened the Annual Declarations of Interest and the Specific Declarations of Interest (SDoI) filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

4. Scientific topic

4.1. Discussion on the requirements for the collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database⁴

First of all, EFSA and ECDC explained the envisaged data flow, logical components and constraints of the ECDC, EFSA and Joint System. The Working Group discussed then the requirements for the analysis

² <http://www.efsa.europa.eu/en/keydocs/docs/independencepolicy.pdf>

³ <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

⁴ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2017-00397>

regarding: data collection (submission, storage and data sharing), and data analysis (sequence read data quality, genome assembly, inferring genomic relationships, strain nomenclature, genome characterisation and statistical inference of events). The needs for consulting hearing experts are being explored.

The WG also discussed and agreed deadlines for future drafting of the draft report.

5. Next meetings

The 3rd meeting will be held on 13 March in Stockholm followed by a Web Conference (end April/May, date not set yet).

One additional physical meeting and two Web-conference meetings will be scheduled for 2018. One physical meeting and one Web-conference meeting will be scheduled for 2019.

Minutes of the 1st meeting of the Working Group on "Technical support to collect and analyse whole genome sequencing (WGS) data in the joint ECDC-EFSA molecular typing database"

Held on 14-15 December 2017

(Agreed on 15 February 2018)

Participants

- **Working Group Members:**

João André Carriço

Eva Litrup

Michel-Yves Mistou

Stefano Morabito

Joël Mossong

- **Hearing Experts¹:**

Not Applicable

- **European Commission and/or Member States representatives:**

Pamina Suzuki (SANTE G4)

Aisha Sauer has participated via teleconference (SANTE C3)

- **EFSA:**

BIOCONTAM Unit: Beatriz Guerra Román, Valentina Rizzi (co-chair),
Raquel García Fierro

AMU Unit: Federica Barrucci

DTS Unit: Chiara Bianchi and Giancarlo Costa

DATA Unit: Luca Pasinato

- **Others:**

¹ As defined in Article 17 of the Decision of the Executive Director on the selection of external experts:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

The EFSA Working Group is working jointly with a corresponding ECDC Working Group in a Joint ECDC-EFSA Working Group. ECDC external experts and staff participated in the meeting.

ECDC Working Group Members:

Vitor Borges, Guy Cochrane, Tim Dallman, Renata Karpíšková

ECDC Staff:

Ivo Van Walle (co-chair), Daniel Palm. Joana Revez has participated via teleconference.

1. Welcome and apologies for absence

The Chairs welcomed the participants.

The EC request to EFSA and ECDC for a Technical Report will be addressed by the joint ECDC-EFSA WG.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes² and the Decision of the Executive Director on Declarations of Interest³, EFSA screened the Annual Declarations of Interest and the Specific Declarations of Interest (SDoI) filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

4. Scientific topic

4.1. Needs for collection and analysis of whole genome sequencing (WGS) data in the Joint ECDC-EFSA Molecular typing database⁴

² <http://www.efsa.europa.eu/en/keydocs/docs/independencepolicy.pdf>

³ <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

⁴ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2017-00397>

ECDC and EFSA provided background information on the current Joint ECDC-EFSA Molecular Typing Database and WGS activities currently taking place in each Institution.

The Working Group discussed the mandate and clarified the terms of reference of the request with the European Commission. A preliminary table of contents of the draft Technical Report was presented and reviewed. The needs for consulting hearing experts will be explored.

The WG also discussed and agreed deadlines for future drafting of the draft report and a provisional plan for future meetings.

5. Next meetings

The next Web meeting will be held on 22 February, followed by a physical meeting on 13 March 2018 in Stockholm.

Two additional physical meetings and three WEB-conference meetings will be scheduled for 2018. One physical meeting and one WEB-conference meeting will be scheduled for 2019.

Document history

Document reference	Version 1
Prepared by Beatriz Guerra	
Reviewed by Valentina Rizzi	
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