

## CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION

### International Co-operative Programme on Effects on Materials, including Historic and Cultural Monuments

#### Minutes for the 36<sup>th</sup> Meeting of the Programme Task Force

The meeting was held on May 6-8, 2020 with several independent sessions taking place at Teams. There were total of 24 participants from 13 countries, including the chair and secretariat of the working group on effects. All participants joined the meeting at different sessions depending on their responsibilities. All presentations presented in the meeting can be found at Teams in the ICP Materials group and at the ICP Materials home page for a limited time. For further assistance concerning presentation files, please contact [namurata.palsson@ri.se](mailto:namuraata.palsson@ri.se).

#### **Session overview**

May 6 09:15-11:00 General session 1(2)

May 6 12:30-16:00 Exposure for trend analysis: Reporting 2020

May 7 09:30-11:00 Exposure for trend analysis: Exposure programme 2020-2021

May 7 12:30-13:30 Update of mapping manual Ch4 to include soiling

May 7 13:45-14:45 Update of dose-response function for zinc

May 7 15:00-16:00 Measurements for evaluation of chloride deposition

May 8 09:30-11:00 UNESCO Cultural heritage sites

May 8 12:30-15:00 General session 2(2)

#### **Wednesday May 6**

##### **09:15-11:00 General session 1(2)**

##### **1. Test of the meeting system 09:15-09:30**

At 09:15, participants started to join the meeting.

##### **2. Opening of the meeting**

Johan started the meeting and gave practical information to all participants. All participants agreed on recording the meeting for the purpose of writing the minutes. The recorded file will be discarded once the meeting minutes is distributed.

##### **3. Introduction of participants**

Manfred Schreiner, Austria

Katerina Kreislova, Czech Republic

Tiina Vuorio, Finland

Aurelie Verney-Carron, France

Stefan Brüggerhoff, Germany

Ruth Keller, Germany

Faiz Al Sharif, Germany

John Christodoulakis, Greece

Pasquale Spezzano, Italy

Teresa La Torretta, Italy

Terje Grøntoft, Norway  
Lech Kwiatkowski, Poland  
Daniel de la Fuente, Spain  
Johan Tidblad, Sweden  
Andrew Gordon, Sweden  
Namurata Pålsson, Sweden  
Jessica Andersson, Sweden  
Markus Faller, Switzerland  
Ulrik Hans, Switzerland  
Tim Yates, UK  
Isaura Rabago (chair of Working Group on Effects)  
Krzysztof Olendrzynski (Secretariat of Working Group on Effects)  
Carolin Sanz Noriega (UNECE/CLRTAP)  
Vasile Rus (observer)

*Note:* the list above includes all participants joining the meeting in at least one of the sessions listed above.

#### **4. Overview of meeting objectives and approval of the agenda**

Johan presented an overview of the agenda of the current meeting. The agenda was approved without additions.

#### **5. Information from the joint meeting of EMEP & WGE**

Isaura gave an update of current WGE and Convention issues from recent meetings including the ICP Modelling and Mapping meeting, the joint session of EMEP-WGE, the session of EB and the joint session of EMEP-WGE extended bureau; and financial and budgetary matters.

#### **6. 37<sup>th</sup> and 38<sup>th</sup> meeting of the Programme Task Force**

Johan invited Stefan to give details on the next meeting. The meeting in Bochum will be held in 2021 instead of 2020, May 5-7 (subject to confirmation).

A kind offer from Daniel regarding the meeting in 2022 was made, it is proposed to be held in Madrid, Spain. The date will be decided at the next meeting.

#### **7. Tour de table; Current financial and Corona situation affecting possibilities to perform tasks**

All participants presented an overview of the funding situation and how the corona virus situation affects the work. In summary, the situation is stable and there is good hope that the exposure will be possible in October.

Johan - RISE Kimab was selected to be funded from Swedish Environmental Protection Agency for 2 more years, with a possibility to prolong it for 2 more years. Concerning the corona situation, working from home and at office are possible. There is restriction of traveling outside Stockholm. Therefore, Aspveten visit is not possible now.

Aurelie - It is better in the countryside of France. People must be at home. Possibility to go back to the lab in July-August. Do not know yet if corona virus situation will affect ordering of materials. No problems with the financing at this stage.

Daniel - Last year, they planned to sign the contract for 4 years with the Ministry, but it was not signed due to certain alteration of regulation. The contract signing is postponed due to the corona virus situation, but no problems performing the tasks are anticipated due to lack of financing. In Madrid, people work from home since March

10 and it is possible to come to lab. Travelling to Madrid is OK, but not to Toledo. The situation should be resolved already in October. Need to buy weathering steel materials and prepare the samples.

Ruth - In Berlin, the universities have been closed since March 7. The situation is updated day by day. Got financed for materials for testing.

John - In Greece is the same as in Stockholm concerning corona virus situation. Universities are closed. Classes are given online. They got financial support from university to continue the project.

Manfred - Vienna was completely locked down since the middle of March. After Easter, the lock down has been gradually released. Classes are given online, as well as examination. No lab is opened. Exposure in Vienna is taken care by Michael Melcher since he lives very close to the test site. Manfred will be retired in the end of September and are confident that Michael will continue with the project.

Markus - Financing is not a problem. At Empa, not so many people come to work. Nevertheless, going to work and lab is possible. Traveling is not restricted in Switzerland and materials of Zn is enough.

Pasquale - Financing is the same as last year. Two months of complete lock down in Italy. Travel to the test site is not possible. Hope it is better in October.

Stefan - Three-year contract was approved by environmental agency. The budget is enough for travelling and to purchase IVL samples. The funding is available from January 2020-December 2022. And Germany will be able to join the program. Concerning corona virus situation, going to office is not restricted.

Terje – Corona virus situation is like the one in Germany. Going to office is possible, if needed. If the situation keeps going this way, exposure in October should be possible. The financial situation is good.

Teresa - Travelling to Milan should hopefully be possible in October.

Tina - Universities in Finland has been closed for 8 weeks. Classes are given online. One person is allowed in the lab at a time. The test site is in the university area. Financial situation good.

**Wednesday May 6 (contd.)**

**12:30-16:00 Exposure for trend analysis: Reporting 2020**

Johan started the session by giving the overall agenda and objective of the afternoon session.

## **8. Reporting requirements**

- a. Report 87: Environmental data report  
Terje has drafted Report 87.
- b. Report 88: Report of trends in corrosion, soiling and pollution 1987–2019  
The content of Report 88 will be discussed after all presentations.

## **9. Presentations**

### *a. Environmental data*

Terje presented the environmental data and started with contribution of each test site and new sites that have started since 2017. Availability of data in percentage was shown. Site #16 and #57 missed data points every month and may affect the average value. Some annual data are missing. Data of 2017-2018 were added to publication.

Johan asked if the added data were from the same sites as previous years.

Terje answered that the data from the new sites were also included. Significant deviation between IVL and local measurements can be observed. Precipitation is different each year.

Johan suggested analyses of individual test sites.

Stefan asked about uncertainty of the data on pollution. Should we try to answer the notation remarks in the excel file? Terje answered that the notations were included when Terje received the data from different sites. Limit at station #10 must be clarified by Stefan and give the information to Terje.

### *b. Carbon steel and stainless steel*

The presentation was given on May 7. A new equation for corrosion of carbon steel for ICP materials should be considered. Now more data are available, therefore equation can be improved.

Terje informed that pH of site #23 is available.

Johan mentioned that when pH is missing, we could have a general agreement on what number should be replaced. Equation of UN ICP for carbon steel is very conservative. Development of function in the equation should be looked at. If we would like to use our data for ISO, chloride should also be measured.

### *c. Weathering steel*

Daniel gave a summary of weathering steel exposure in 3 different groups based on starting exposure date. Exposure of 8 years for carbon steel for comparison to weathering steel is suggested. Characterization of corrosion product is also proposed.

### *d. Zinc*

Markus presented a comparison of 2011, 2014 and 2017 to 4-year exposure. Characterization of data according to characteristic of test sites - industrial urban, rural was given. Calculation of corrosion rate to micron per year was done.

Correlation to the environmental data is discussed at the special session on dose-response function for zinc.

*e. Copper*

Namurata presented trends in corrosion of copper and pollution. Terje mentioned that the starting time of the exposure may affect the corrosion.

Markus also agreed that the same effect may be applied to zinc – it is more common to mention this effect for zinc.

Johan mentioned that climate effect may be stronger than pollution effect.

Manfred asked if metal loss was done by pickling (yes).

*f. Limestone*

Tim presented correlation of surface recession and environmental parameters, particularly pollution. Reconsideration of dose response function was proposed to be done.

Stefan asked if acidity play any role in deterioration of stone.

Tim answered that pollution play a minor role.

Tim asked if SO<sub>2</sub> below 10 micrograms was significant. To reduce from 10 to 5 will not make large difference but may cost too much concerning cost evaluation.

Johan mentioned about correlation between SO<sub>2</sub> and corrosion. Could it be because of the sensitivity of the measurement?

Terje answered that measurement resolution is good.

Stefan mentioned SO<sub>2</sub> below 10 micrograms per cubic meter.

*g. Modern glass, limestone, and marble*

Aurelie presented soiling of modern glass, limestone, and marble. Stefan asked about the procedure to measure the coverage of the surface.

Aurelie answered that she used Image Processing on the OM image. It was easier for marble, but more complicated for limestone to separate the black spot.

Stefan mentioned lichen on the surface from biological growth that contribute to the pollution form the samples that have been exposed for 30 years.

*h. Coil coated materials*

Tiina mentioned about the best way to judge the samples: good and bad samples. Samples appeared similar after one-year exposure. Glossy could be the best factor to judge the samples.

Manfred asked what type of hyperspectral camera will be used.

Tiina answered she does not know yet.

How the samples were prepared before exposure?

No cleaning.

Aurelie asked if rainfall make the sample clean or not.

Tiina answered that similar results with the samples exposed to sites with high and low amount of rainfall were observed.

Stefan asked about wet and dry samples.

## **10. Discussion and decisions**

*a. Overall structure of Report 88*

Johan started the discussion on how to structure the report and different grouping of test sites.

Terje - Grouping of station - rural, urban and industrial are quite straightforward. Principle component analysis was used in his presentation. All the variables were included for the evaluation for grouping the test sites. Suggestion on keep using industrial, urban and rural to avoid confusion. Acidic can be considered.

Tim - Grouping test sites based on principle component analysis may not be good for grouping pollution, but to compare to conventional way. Besides effect on soiling, should particulate be discussed in terms of effect on corrosion as well?

Johan - To mention the measurement error and uncertainty for every material. Separate chapter for each material. When compile the report, general discussion will be added.

Terje - Principle component analysis may not be good now.

Agreement: Industrial, urban, rural.

Additional: other groups are possible for each material for discussion.

Separate chapter for measurement error and uncertainties. One sub-chapter about effect of particulate on corrosion.

*b. Time schedule*

Draft of the report should be ready in September 2020. Report of each material should be submitted before summer vacation. All participants agreed to submit the report to Johan by the end of June 2020.

Daniel asked if there is any template? Johan said no and asked all participants to send the report in both word and excel files, in case the format of all plots must be harmonized.

The chapters for each material include:

1. Corrosion data
2. Effect of particulate
3. Measurement error and uncertainty
4. General conclusion

Terje said that IVL is easy for him to contact and ask for information about measurement error, but the error in local measurement is more diverse and difficult to obtain.

Stefan said that he will check at Bottrop about the measurement uncertainty with SO<sub>2</sub> below 10 micrograms per cubic meter and inform Terje.

**Thursday May 7**

**09:30-11:00 Exposure for trend analysis: Exposure programme 2020-2021**

Johan welcomed all participants and presented the agenda of today's meeting and started with Katerina's presentation who could not join yesterday (see above for content).

**11. Referencing documents and reporting requirements/plans**

- a. Report 84: Technical manual for the trend exposure programme 2017-2018
- b. Technical Manual 2017-2021 (2021)
- c. Report on results of corrosion and soiling from the 2020-2021 exposure programme for trend analysis (2022)
- d. Environmental data report 2020-2021 (2023)
- e. Report of trends in corrosion, soiling and pollution 1987-2021 (2023)

**12. Decision on exposure sites including possible new exposure sites**

Lech Kwiatkowski gave a short presentation about the situation in his instate in Poland. Each test site was discussed regarding the possibilities to continue exposures in the new exposure program based on Table 2 in Report 84. An updated table will be circulated after the meeting.

1, 3 – confirmed

10 – confirmed

13-16 – 13-15 confirmed, but 16 will not continue the new exposure. Note that at site #13 will only use passive sampler since local measurement is problematic.

21, 23 – confirmed

24, 26 – confirmed with note that at site #26 has some recent problem with measurement of climate parameters

31, 33 – confirmed

35 – Johan will contact the test site manager

40 – confirmed

41 – confirmed

45 – confirmed

50 – Will give the answer next week due to change of management team

51 – confirmed

53 – confirmed with note that the wooden panel must be repaired

57 – confirmed

58 – Johan will contact the test site manager

59 – Johan will contact the test site manager

60 – Johan will contact the test site manager

61 – Johan will contact the test site manager

**13. Decision on measurement and collection of environmental data 2020-2021**

The discussion was based on Table 3 and 4 in Report 84 (mandatory and optional parameters)

pH will be kept as mandatory, so no changes to Table 3.

There was a discussion if PM10 should be made mandatory, but the meeting agreed that this was premature but the PM10 may be mandatory in the future. John mentioned

about measurement sunlight radiation. Limestone is affected by sunlight. Tiina said that sun radiation affects coil coating, but the information can be found from the public source. Tiina said that if it easy to measure, then it is good. Johan suggested that sun radiation can be added as optional parameter. Tiina already measures UVA, UVB. Johan suggested the same measurement to compared with old data, hour of sunshine. To measure sun radiation is complicated based on what factor is measured. Sunshine hours will be added as optional parameter. The only change to Table 4 will be to add sunshine as an optional parameter.

#### **14. Decision on materials to be exposed 2020-2021 (one-year trend exposure), including numbering of samples**

The discussion was based on Table 1 in the technical manual.

On the rack now, there are 4-year samples (2017-2021).

There was a discussion to start a new 8-year weathering steel exposure in parallel with carbon steel exposure. There was also a discussion to start a parallel exposure of different zinc materials. For soiling a new one-year exposure was considered and for marble. For coil coated materials a 3- or 4-year exposure was discussed. It was a bit uncertain if all these samples will fit on all racks or if there is a space limitation. It was decided that Johan will make an enquiry about the space on the rack at the individual test sites and after that a proposal for exposure scheme.

#### **15. Time schedule**

We should aim to start the exposure during October as usual.

Before summer the list of test sites and materials to be exposed should be decided in order for sub-centres to be able to prepare samples well in advance for the exposure.

Before exposure sub-centres will send samples with instructions as usual.



**Thursday May 7 (contd.)**

**12:30-13:30 Update of mapping manual Ch4 to include soiling**

**16. Referencing documents and reporting requirements**

*a. Chapter 4 - Mapping of Effects on Materials (2015)*

Johan showed the mapping manual and went through the table of contents. A new chapter including the effects of soiling is the topic of the discussion this session. It was decided to separate the chapter into transparent and non-transparent materials

*b. Revision of the Mapping Manual to include soiling (2021)*

**17. Selection of materials (transparent and non-transparent)**

*a. Dose-response functions*

For modern glass, Johan discussed about dose response function by means of linear regression and NN. Aurelie mentioned that NN is better, but with certain limitation of input data. Linear regression is better for long-term extrapolation, while NN is better for 1-year prediction. Johan suggested that both should be included in the Mapping Manual for glass (transparent). For non-transparent materials, dose-response functions are available for white plastic, painted steel and polycarbonate membrane and includes only PM10.

*b. Acceptable soiling rates*

For modern glass, Haze was mentioned by Terje. Aurelie and Terje has been discussing on the rates and it was either 1 or 3%. Johan suggested that the final rate must be decided for the final Mapping Manual. For glass material, the discussion will continue until next year.

Pasquale mentioned two DRFs from NN and linear regression, and he prefers multi-linear regression. Terje agreed with Pasquale. We need to specify when NN equation is valid. Johan mentioned that it is needed to investigate more in order to specify acceptable soiling rates (Haze level).

Pasquale mentioned that he prefers 1% than 3%, however Johan proposed that we should discussed more on this issue by looking at more practical cases in Europe. Aurelie mentioned the case in Paris with cleaning of the Louvre.

Terje mentioned that the cleaning is performed at least every four years in several cases and that cleaning is not related to air pollution.

For non-transparent materials Johan mention the materials above and there was a discussion to use 30% or 35% loss of reflectance as criteria. Johan will distribute previous and recent publications in this area.

All these materials will be included in the mapping manual but there is still work to be done.

**18. Possible need of revision of other parts of Chapter 4.**

Terje mentioned application of DRF on cost analysis in IV. 4 in Mapping Manual.

Johan will add some text in the Mapping Manual concerning this issue. The revision of text should be proposed in the next meeting in Bochum in May 2021, and the final version will be presented to WGE in September 2021.

Johan suggested that we should add some text in the beginning of the Mapping Manual.

Markus suggested that we can wait for DRF of Zn.

General conclusion is that soiling will be included in the Mapping Manual.

Revision on the cost will be done to clarify certain points.

Katerina mentioned that more statistic treatment is needed to be done before deciding what more to add to the Mapping Manual.

#### **19. Time schedule**

The proposal of the text will be distributed before the next Task Force meeting.

### **13:45-14:45 Update of dose-response function for zinc**

Markus led the session.

#### **20. Discussion**

Markus presented the correlation between Zn corrosion and SO<sub>2</sub>, rain, pH and Cl<sup>-</sup>. He mentioned that temperature and RH were not significant.

R<sup>2</sup> of 60% was achieved when discarded Cl<sup>-</sup> in DRF equation. R<sup>2</sup> for each year are very varied. Markus suggested to update DRF equation for Zn when 4-year data is available. Johan asked if we should mention HNO<sub>3</sub> in DRF of Zn, or if we should try without HNO<sub>3</sub>.

Katarina mentioned bad correlation between Cl<sup>-</sup> in rain and Cl<sup>-</sup> deposition. Cl<sup>-</sup> show a strong effect on corrosion of all metals. Cl<sup>-</sup> in precipitation do not reflect directly atmospheric corrosion.

Markus proposed to have some additional text in the mapping manual for HNO<sub>3</sub> concerning the dose-response function for zinc.

Possibility to use data obtained outside ICP Materials exposures.

Markus said that it is possible to prepare data for the next meeting in Bochum. Data found in literature is not up to date and is not in EU. Johan mentioned about corrosion sensor. The application of corrosion sensor was discussed among Johan, Katarina and Markus. Johan mentioned the use of sensor on mobile exposure, for example on trucks. Katarina can ask her colleague to prepare sensor prototype to expose during fall 2020. Johan asked about which data Markus will include. Katarina suggested exposure of Zn sheet for 1-year exposure (2020-2021), resulting in extra 3 samples. Only concern is the space on the rack. Daniel commented that for Zn, SO<sub>2</sub> is more important than Cl<sup>-</sup>. Daniel has more data on Cl<sup>-</sup> and SO<sub>2</sub> (passive sampler), temperature and RH. DRF using number of rainy days fits better than amount of rainfall in the case of Zn in Spain. Johan suggested more parameters, i.e. number of rainy days and sunshine hours, as optional parameters.

Terje, Markus, Johan and Daniel agreed that the limit of rain should be defined to count as rainy day. Lech also observed number of rainy days. It is better than precipitation amount.

#### **21. Time schedule**

There is no official reporting requirement for this point so the work and discussion will continue during the year and at the next meeting

## **15:00-16:00 Measurements for evaluation of chloride deposition**

### **22. Discussion**

Daniel presented preliminary data from parallel 1- and 3-month exposures of wet candle measurements. The results were only available during October - December 2019 due to corona situation, so it was not possible to travel to pick up the samples. Chloride deposition rate was measured by means of wet candles. Preliminary observation is that 3-month measurement of Cl<sup>-</sup> deposition rate is not good for sites with high chloride deposition. But definite conclusion could not be made yet.

Katerina presented correlation between dry plate and wet candle measurements. Correlation coefficient of the test site with effect of high traffic were higher and like those stated in ISO 9225. Katarina proposed dry plate since it is easy to install and less affect to climate. One-month and three-month measurements depends on test sites and season. High traffic zone exhibits higher Cl<sup>-</sup>, winter exhibits higher Cl<sup>-</sup>. We need more data for final decision.

Johan asked that under which condition we can use 3-month measurement instead of 1-month. Is it possible for Katerina to address this to ISO?

Johan asked about influence of cation in the case of marine situation and de-icing salt. Is there is any effect of cation?

Katerina explained that she has no experience on that since there is no marine atmosphere in Czech R.

Johan encouraged everyone to do this comparison measurements, 1- and 3- month. It is possible to do this at Bohus-Malmö.

Johan asked for technical description of dry plate from Katerina.

Daniel will send his results to Katarina and she can present it to ISO to encourage a revision of ISO 9225. Daniel also considered to join ISO committee. However, more data is needed.

It was agreed that this activity should be promoted by ISO and not made within the official program of ICP Materials even if all members were encouraged to participate in the standardization work.

**Friday May 8**

**09:30-11:00 UNESCO Cultural heritage sites**

Results of UNESCO sites will be discussed. Johan invited Pasquale to host the session.

**23. General discussion and reporting**

Pasquale presented Report 86, which was delivered last year.

Pasquale presented a draft Report 89, which will be delivered this year. Progress on corrosion in the report to meet the target in 2020 and 2050.

Aurelie mentioned about contribution of each pollutants that they must be clarified.

Terje asked about HAZE.

Katerina asked about effect of climate change. Evaluation of influence of temperature change was discussed. Johan proposed a discussion section on effect of climate change.

Aurelie mentioned about glass as well.

Tim mentioned about transboundary pollution. TOW is very irregular during these days based on climate change.

**24. Discussion of possible ways of upscaling economic results**

Pasquale started the discussion with a presentation.

Terje suggested for inventory of protected heritage from each country. To upscale by country or region.

Tim said that we should define cultural heritage that is significant, if we should stick with UNESCO sites. Or focus on the representative of each region, for example in Rome there are plenty of cultural heritages.

Johan suggested to group the heritages, focus on the similarities.

Tim mentioned upscaling from different perspective, materials, component, building, cities, etc.

Aurelie suggested national database for historical monuments in France that can be used for extrapolation.

Johan suggested to start with common inventory of different national databases.

If anyone has another idea on the upscaling after the meeting, please contact Johan or Pasquale.

**25. Planning of Report 2021 and contribution from individual monuments**

Pasquale presented plan of ICP materials Report 90 for next year. The resolution of EMAP model will be increased to 50 x 50 km.

Terje asked about the renovation cost of the heritage sites – background and pollution-related. The correlation of the pollution related to the renovation cost should be studied.

Pasquale answered that it is quite difficult to obtain information of such study.

Johan agreed that even if it is difficult to obtain this information is important.

**26. Time schedule**

Pasquale will distribute report 89 to everyone in the end of May for comments. And by the end of June, everyone will send back their comments so Pasquale will finalize the report by September. Pasquale will send the second draft by July 15.

## **12:30-15:00 General session 2(2)**

The session started with individual session report (see text above).

### **27. Contribution to joint report**

Johan and Pasquale will prepare the contribution to the joint report using results from the trend exposure and UNESCO call for data

### **28. Dissemination of results**

#### *a. Scientific publications*

Joint publication is not proposed this year, but individual publication is encouraged.

Daniel will finish characterization of weathering steel this year and publish next year. Collaboration with Katerina is possible.

Katerina mentioned that there are many data and publication is possible. It is important to publish for Corrosion community.

It was agreed that distribution of raw data should be considered in all cases.

Terje mentioned a publication on corrosion cost of Oslo with the title of "Recent Trends in Maintenance Costs for Façades Due to Air Pollution in the Oslo Quadrature, Norway". Another manuscript was submitted as well.

Aurelie mentioned a publication on characterization of marble and limestone to be submitted next year.

Johan encouraged all participants to have a look on the publication list on ICP web page to see if yours is missing and send the list to Johan.

#### *b. Conferences*

Due to corona pandemic, there is no conference and it is difficult to plan. Johan encouraged all participants to share with the network if there will be any conference that we can contribute in the future.

#### *c. Development of web page*

Johan showed web page of [www.unece-wge.org](http://www.unece-wge.org) where all ICP projects can be accessed. Johan encouraged all participants to have a look. This webpage is not hosted by ICP materials, but we can support it with new information, if there is a need. Johan also showed ICP materials web page. After the meeting, all presentations will be uploaded there.

### **29. Any other business**

John passed the regards from Costas Varotsos who could not join the meeting due to courses.

Johan also expressed his appreciation to all Pasquale's hard work.

Pasquale also expressed his appreciation to the Task Force members as well.

Hopefully, Pasquale will be able to join next meeting in Germany.

Johan welcomed Teresa as new co-chair.