Supplementary material

- **OVERVIEW**

The original proceedings paper presented results obtained with a prototype MA-XRF scanner on artificially corroded copper coupons, to verify the instruments' analytical capabilities when analysing this particular type of samples. In the proceedings paper, only roughness evaluation and high-resolution photography were carried to complement MA-XRF data and understand few of the factors which could be a bottleneck for the prototype system being tested. With the information obtained, it was possible to hypothesize on the stratigraphy of the corrosion products layers.

The introduction was re-structured to better explain and emphasize the goal of the studies conducted. For these reasons, few of the references present in the original text were removed.

Nonetheless, to further deepen the discussion and verify the hypotheses previously made, Field Emission Scanning Electron Microscopy (FE-SEM) coupled to an Energy Dispersive Spectrometer (EDS) and µ-X-Ray Diffraction (µXRD) analyses were carried out on the samples. These analyses could give information on the corrosion species present and help better understand the results obtained with the MA-XRF scanner prototype.

The possible presence of chlorine was now fully understood, and the discussion was enhanced.

A thoroughly understanding of the data obtained with the prototype and its capabilities was now achieved.

- **FIGURES**

Original Figures 1 and 2 were changed and merged, now including FE-SEM and µXRD information as well. A schematic drawing of the MA-XRF scanner prototype was added. Original Figure 5 had its caption changed in what regards the chlorine map obtained (E), as it is now known that it does not represent the chlorine distributed in the sample surface, bot more likely, data noise.

- **REFERENCES**

The proceedings paper was added as reference 8. Together with the changes in introduction and the new discussion added, several references were added to the text, namely references 1, 2, 3, 4, 6, 7, 9, 10, 15, 22, 25, 27 and 28.