INSTITUTE OF CORROSION

MARINE CORROSION FORUM

FOR ALL WET CORROSION ISSUES

Welcome to MCF – Marine Corrosion Forum / ICorr – Institute of Corrosion (ABZ), 2021 April Webinars.

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FOR ALL WET CORROSION ISSUES

Institute of Corrosion (ABZ) and MCF partnering with:

- OMNI
- 26th April 2021

INSTITUTE OF CORROSION

“OMNI Integrity Management Software Overview”

OMNI - Ray Sivarajan Senior Integrity Engineer | Bill Hedges Corrosion & Integrity Management Consultant

26th April 2021

About Us

- OMNI is a novel Operating System which uses machine learning to give Integrity leaders a continuous 360 degree understanding of their business assets in real time.
- Organisations today face increasing challenges in the changing geopolitical and industry dynamics, which can have huge impacts on the overall success of the business. Constraints such as resource and experience shortages make it ever more difficult for organisations to achieve the efficiency levels required to maintain profitability, whilst maintaining safety and environmental levels.
- OMNI https://icr-world.com/omni
- Personnel will discuss and demonstrate their newly developed Integrity Management Suite that Builds on expertise gained in the field by the ICR Group https://icr-world.com/about-us

OMNI - Ray Sivarajan
Senior Integrity Engineer

About Us

- The software boasts built-in automation between Modules, Workflow Tracking and Notifications - a first of its kind for integrity software solutions taking visibility and control of integrity activities to a new level.
- Each module can be used alone to integrate with existing integrity systems, or seamlessly used together as a complete solution – to support organisations in their efforts of digitising their full integrity lifecycle.

- OMNI https://icr-world.com/omni

Bill Hedges – OMNI Corrosion & Integrity Management Consultant

Q&A

- Selection of Questions to **OMNI**,
  Post-Presentation 26/04/2021

Questions and Answers – MCF / ICorr Joint Event Aberdeen – April.2021

- Q1. Is the RBI process custom process for all clients or one RBI process that fits all client needs?

- A1. Yes, we can adapt it to suit client specific needs. API RBI Fixed. Custom RBI, yes we can modify that Option for you, and of course subsequently x-check against API.

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- Q2. Can OMNI generate and overall Inspection Schedule...i.e. All RBI Assessed Items for an Asset and their Inspection Due Dates?

- A2. Yes, for a particular Circuit and it’s piping components. Inspection Plan will be based on worst case Inspection frequency and we can generate results in PDF format. Also we can alter the Inspection schedule based on client’s requirement. Additionally, the inspection schedule automatically updates the workpack to enhance overall efficiency of the workpack generation.

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- Q3. Is there intelligence in the software for example if you specify the component has been subject to PWHT does this get automatically captured in the likelihood of a failure mechanism or does this still need to be manually considered?
- A3. Yes, there is a customization process that can be performed for PWHT, if req. to be added as an option. We have considered the PWHT, Liner etc… as input parameters in Data tab, which is where the data is prepared to carry out an RBA. Hence OMNI will automatically screen for their respective damage mechanism in the RBI, and also generate a likelihood of failure in line with the company/API recommendations.
- Please see below Data tab screenshot.

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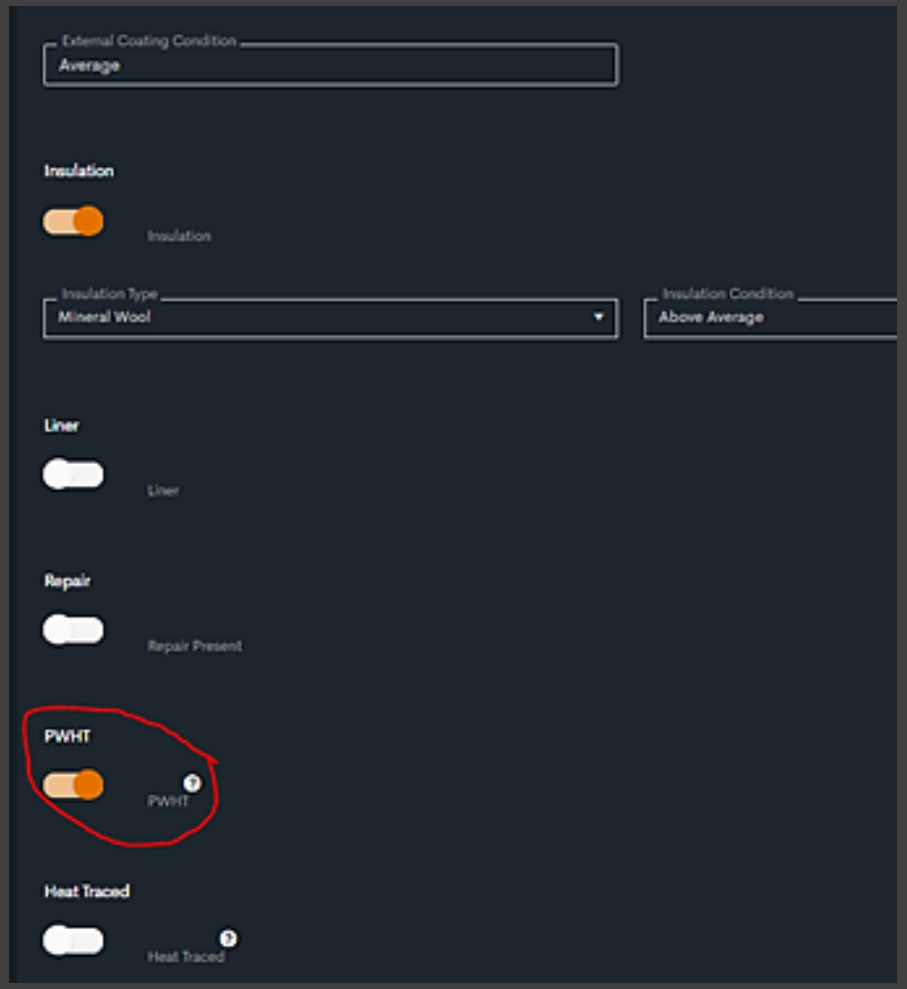
- A3.



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- Q4. What is the backend database used in OMNI software? Is the software only cloud based or also available as on premises solution?

- A4. Cloud Hosting using Microsoft Azure with a Cosmos DB database.

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- Q5. Where are the degradation mechanism assessments carried out within OMNI? we see the risk outcomes, but not the degradation assessments?

- A5. Example CO2 Corrosion, Engineer will have preselected degradation mechanisms. OMNI gives POF Figure based on prev. inputs. In addition,
- "Configuration" module, each degradation mechanism can be edited to suit respective "System" i.e. Please see below for "CO2 Corrosion" we are configuring system "Production System Oil" with its unique CO2 KPI values to address POF levels. Similarly, we can configure for other "Damage mechanisms" for respective systems.

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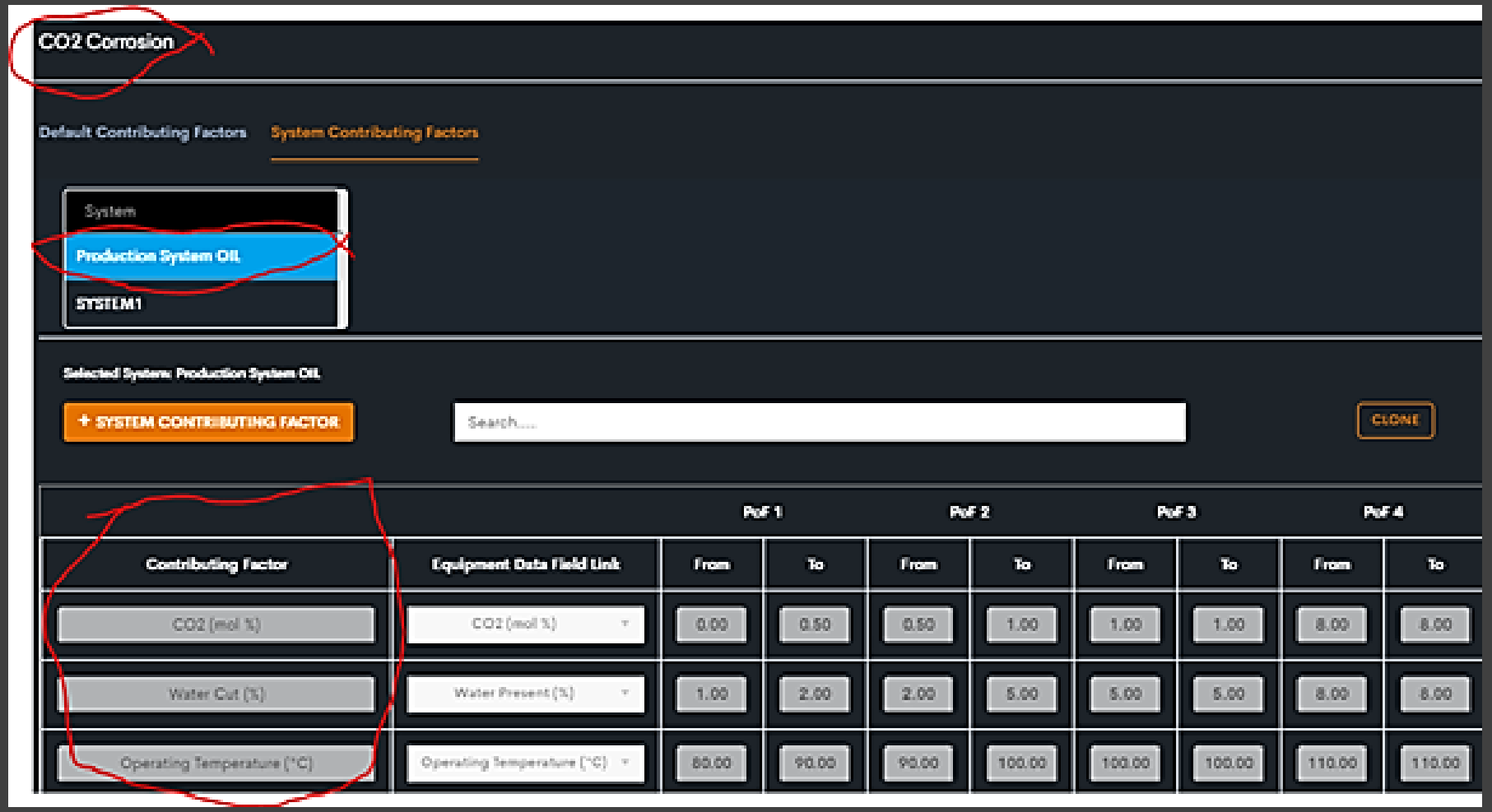
- Q5



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- Q6. How do you deal with the multi-vendor data and its alignment to bring data into single reference system?

- A6. OMNI deals with multi-vendor data and its alignment through an Application Programming Interface (API), which means we are able to pull (and push) data from one system to another i.e. no need to log in and out of multiple softwares to manually pass the datasets.

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- Q7. For the inspection method selected for a particular damage mechanism does the software give recommendation or guidance on the coverage required?

- A7. NDT req's, will be as per API Guidance for specific risks. For custom RBA's, the inspection methods are configured into the software (Configuration Module), which will automatically generate inspection method based on the specific company guidelines.
- Please see below API recommendation on the coverage required for HIC/SOHIC corrosion.

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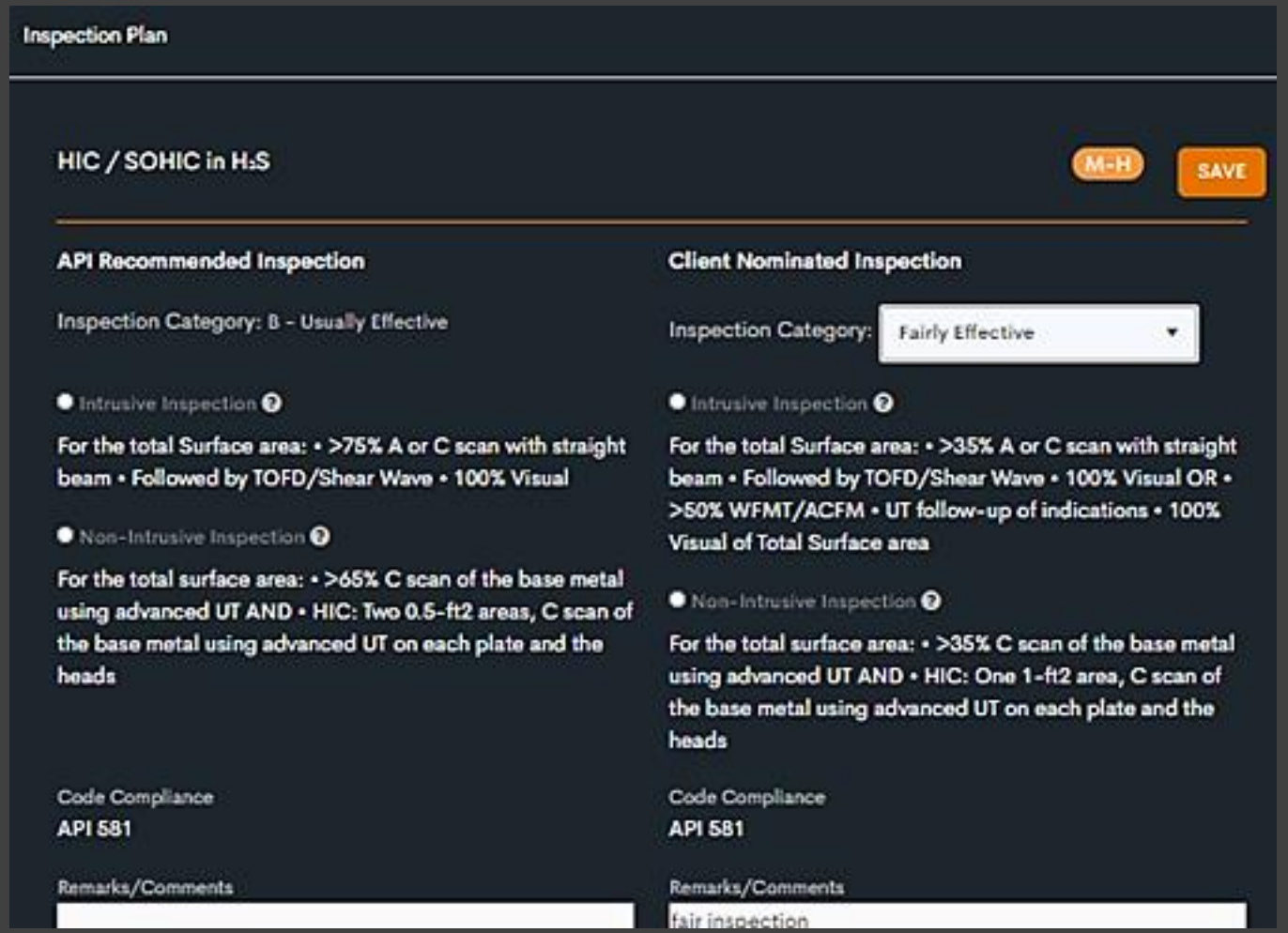
- Q7



Please see also below Configuration Module under Q14, where the inspection methods are set and automatically generated for custom RBA's:

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- Q8. Great software, however, similar software are available in the market do pretty much the same, is there any specific capability that makes your software unique or adding more values compare to similar products?

- A8. OMNI is unique because it has the best of both worlds – API + Customer RBI Comparison. Additionally, we have designed the software with the following unique features:
- Automation: between modules to drive efficiency i.e. automated corrosion screening, inspection planning, workpack generation, defect detection of input inspection report etc,
- Configuration: all clients have software tailored to their specific processes and procedures without the need (cost) of modifications,
- Communications Hub: users are able to communicate directly through the software, removing the need for spreadsheets, emails and even physical meetings,

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- A8. Cont.
- Operational Tracker: automatic tracking of all integrity activities to give real time status updates, automated warning and workflow notifications,
- CMMS Interface: able to connect to CMMS for pushing and pulling of data, all of which is being automatically tracked in OMNI,
- Automated KPI Reporting: KPI dashboard updated real time, fully configured to enable a client to see any KPI's (due to OMNI tracking all activities, we are able to display any KPI requirements),
- IoT Application: in the process of being developed, for live corrosion sensor and process data streaming into OMNI's IOW's, raising warning notifications where required,
- Predictive Analytics: in the process of being developed to work alongside RBI and predict inspection and maintenance requirements.

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- Q9. Hello Ray, Does OMNI allow real time monitoring data inputs and SCADA field device protocol interfaces?

- A9. Yes, we recognize the need to talk to other S/W and this will be done in future. As above, this real time process & operational data is already available feature in OMNI, if we know the type of 3rd party software, then we can establish the respective API interfaces.

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- Q10. Often, we must re-align Due Dates, to suit Planned or Unplanned Shutdown opportunities, can RBI Summaries be re-aligned quickly, to give a Priority list e.g. Top Ten Inspection needs.

- A10. Yes, e.g. April 21 due but we could push out manually by 2M say. Facility not built-in yet.

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- Q11. Kindly update for the range of pipe dia. addressed by the software and is there any provision for Based Line Survey related checks or location in software?

- A11. There are no limitations to pipe diameter in the software. We can establish baseline survey checks after completing a custom RBI and establishing the Inspection schedule. I hope I address your query here, otherwise I am happy to have meeting setup to clarify.

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- Q12. We all know that coupon location is key to get meaningful results. When analyzing the coupon, did you account for coupon locations i.e. did you trim any coupons that had not representative results?

- A12. We cannot answer this query since we are not involved in verifying the coupon location and its effectiveness within the system. OMNI can only analyse the results fed manually or live monitoring system and provide the relevant insights for the engineer to make informed decision.

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- Q13. How does your predictions take into account’ for the effect of the corrosion rate where coupons may not be in the right place? e.g. a coupon in a gas line where it is still operating above the dew point and condensation only occurs further downstream. Do you also link it to the operational conditions for consideration as to how reliable a measured rate is?

- A13. OMNI cannot control the location of Devices, however, if we are involved at the start of the Project for sensor location, all will work much better going forwards. We are as explained working with IONIX to develop the corrosion sensor integration into OMNI, and we are looking for partners to collaborate with us to develop this method.

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- Q14. Is there also a correlation with active asset management corrosion mitigation?

- A14. There will be correlation with active corrosion mitigations provided the mitigations are interfaced within OMNI software. i.e . for CO2 corrosion with corrosion inhibitor as mitigations. Mitigations are configured in the “Configuration Module” to meet the companies guidelines, so all correlations in the integrity lifecycle is in sync to the client’s requirements (outwith API 581 assessments, which is coded as per the standard). Mitigation configuration process shown below:

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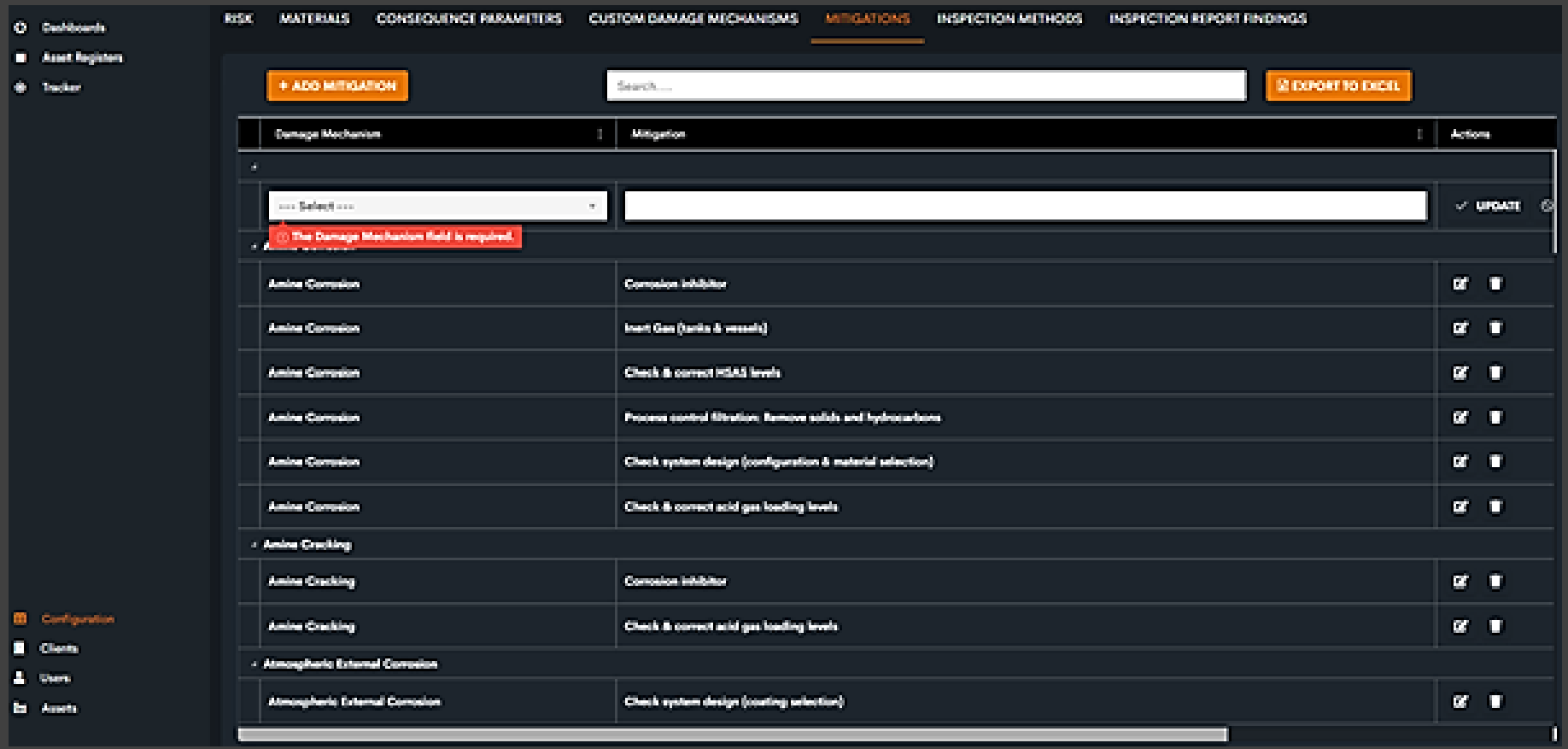
- Q14. Cont.



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- Q15. Are all API RBI Mechanisms modelled?

- A15. Yes, and OMNI can add additional client specific Models. In specific we have modelled all the 26x damage mechanisms based on API for carbon steel and stainless steel. Any mechanisms required over and above this can be added during the configuration process, as below:

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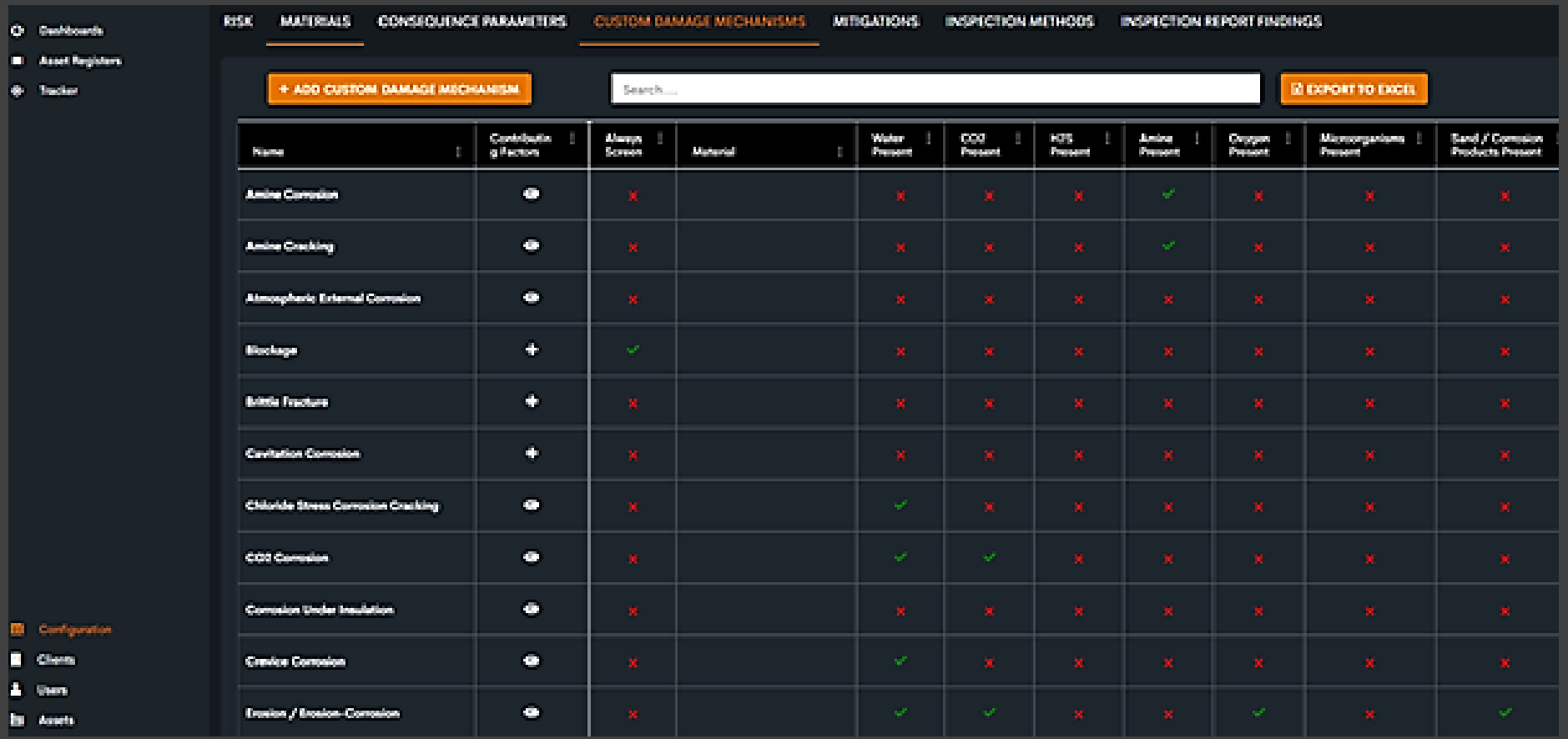
- Q15. Cont.



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- Q16. Can software identify corrosion monitoring locations?

- A16. We are using predictive analytics to establish failure mechanisms for various material types, hydrocarbon systems, corrosion mechanism, type of flow etc…Once these have been established for a specific asset, we can be able to identify corrosion monitoring locations.

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- Q17. Am interested in an RBI software complete demo. for EPC Project Engineering stage, to submit the RBI Report, how you can support such services. How many damage mechanisms can software address.

- A17. We will be interested to support such services for EPC projects, please let us know a suitable time and I will organize a demo to demonstrate RBI module and how we can customize for your need. In our software we have considered also the API damage mechanisms, however if you want us to consider any other degradation mechanism, please let us know and we will consider it. Please contact William.Mclean@omni-integrity.com & Ray.Sivarajan@omni-integrity.com

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- Q18. Does OMNI detects the CUI ranges and selects CUI automatically or needs to be manually entered. Similarly, can it retrieve data from P&ID or isometrics for CUI mapping?

- A18. OMNI detects CUI automatically in both API & Custom RBI. Please see below inputs within “Data tab” .. Once the user selects the “Insulation” presence and its “Type”..OMNI within API 581 screening automatically prescribes the POF level. However it also gives flexibility to the User to alter the input based on his plant knowledge and mitigations… CUI can be developed in the corrosion screening configuration, as per a clients specific criteria requirements.
- Please see below.

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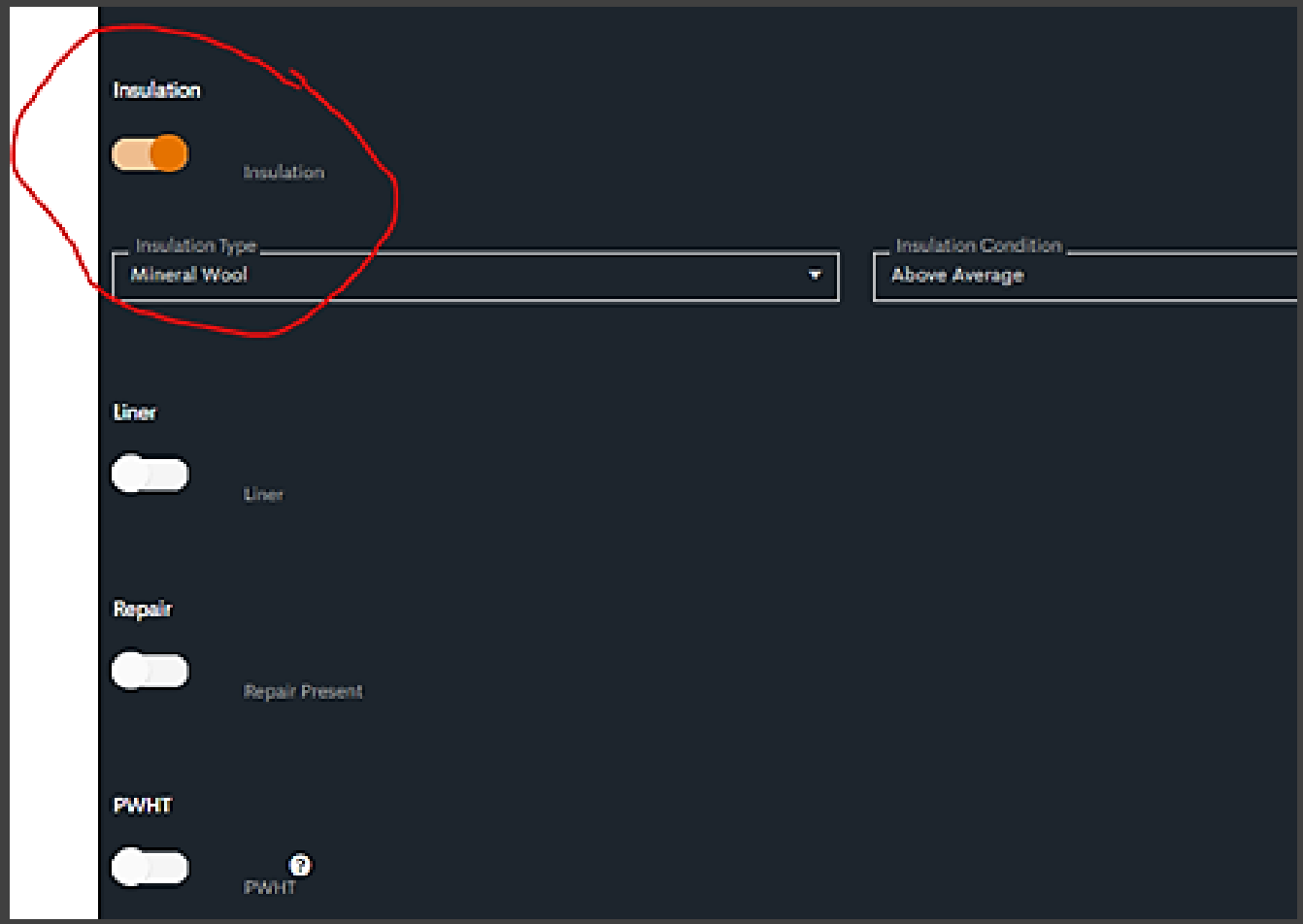
- Q18. Cont.



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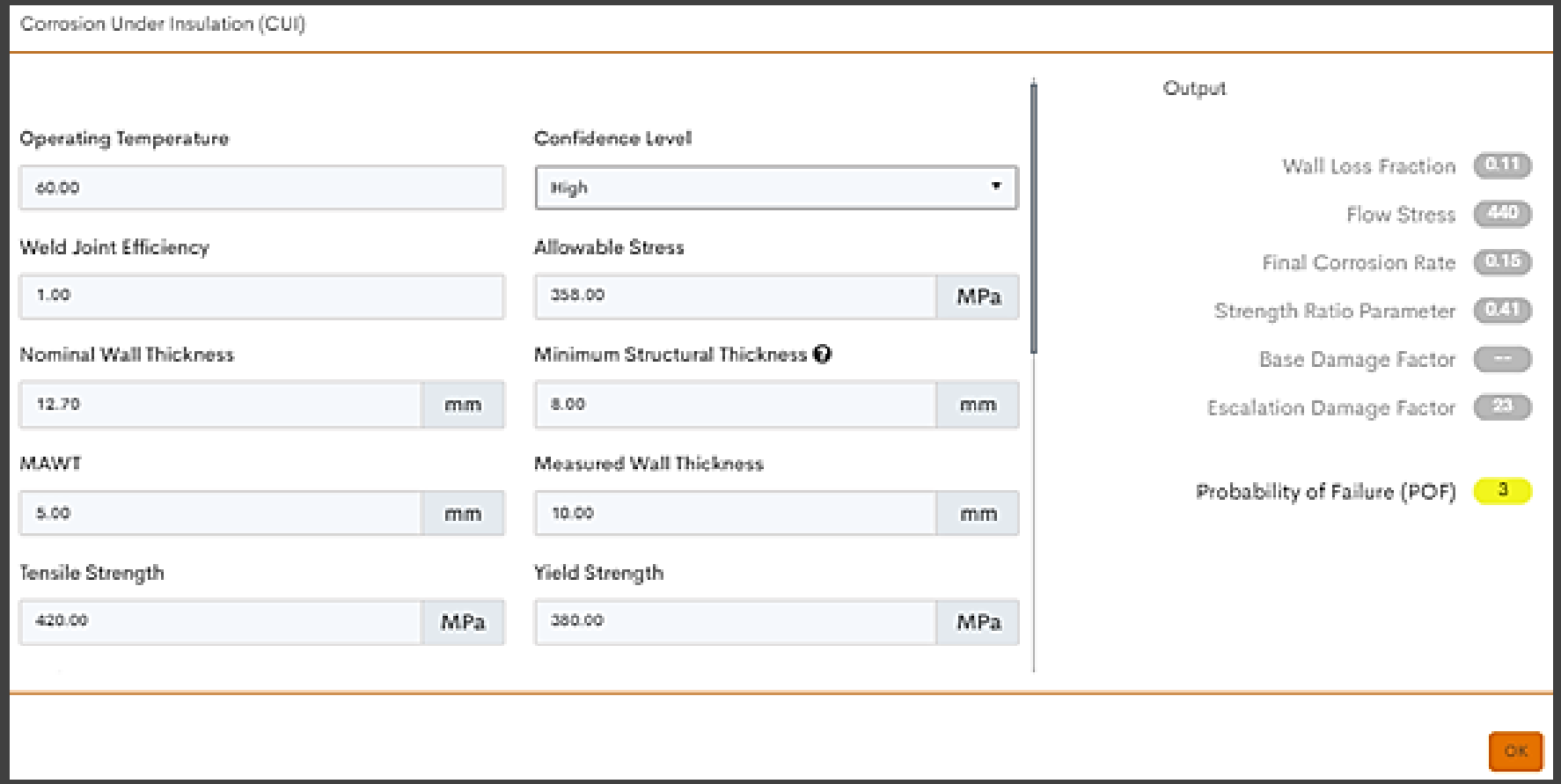
- Q18. Cont.



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- Q18. Cont.

- Under Custom RBI, we can establish the same API screening by establishing Insulation type, condition, operational temperature etc…

THANK YOU FOR ATTENDING

This Webinar was brought to you by MCF working in partnership with ICorr Aberdeen and **OMNI**.