# INCOSE IW 2020 Notes: 1/25/2020

Closed Session

Guide definition (content, as a reference short cliff notes, or more of a body of knowledge). Work instruction with guidance

Roles and responsibilities

SEE CHARTS FOR FINAL Agreement on definitions, products, and assignments

# INCOSE IW 2020 Notes: 1/25/2020 Opening session at 13:30

1) Welcome: Round the room introductions

Presenter: Tami Katz

RWG sharepoint: INCOSE > Connect > Working Groups > Requirements

 RWG General Meetings will have recorded virtual meetings

Join RWG: Goto Profile home > Browse/Join a Working Group > Select Requirements Working Group

Request from a member to address “Machine Learning” within RWG or if other WGs might cover it, or an emerging WG to deal with it.

Went over charter, product plan 2020,

Guides will be templates and process for the practitioner

Charts: [INCOSE RWG IW2020 Presentation 012520](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-25-20%20Saturday%20Content/INCOSE%20RWG%20IW2020%20Presentation%20012520.pptx)

2) Overview of Integrated Data RWG Paper

Presenter: Lou Wheatcraft

Chart 14: Suggestion to add “decomposition” to the definition.

Data is referred to requirements and the attributes/supporting data (oncology)

Q: Did white paper address the maturity of standards and how it impacts the data? A: Yes, there is a section on standards, that introduces the concern. But, agreement is that if there is more than one standard then there is no standard. It did not go down to the detail of what parts of the standard impact what pieces of the data. Concern is how tools can share data, and that standards do not provide the detail needed to implement into the tool. COULD BE A NEW TASK for someone.

Chart 15: Some explanation of the diagram, the top blue box is sources, and the yellow items on the bottom are outputs from the “Data Source”. Many comments that all this information is not even agreed to amongst a single company, much less across cultures.

This theme/foundation will be seen in some of the products coming up. Would like to understand how others use this kind of information set.

Chart 11: Q: Were SCLs mapped to CMMIs? A: No, statement in paper is that SCL is centered on data centric, and not equivalent to CMMI scoring. Suggestion to change SCL to something like Data Capability Level.

Chart 11: Q: Was CM WG interacted with to help define different definitions? A: No, is really different uses.

Charts: [Integrated data whitepaper overview IW2020 011920](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-25-20%20Saturday%20Content/Integrated%20data%20whitepaper%20overview%20IW2020%20011920.pptx)

3) Requirement Modeling Evaluations at AIRBUS

Presenter: Pascal Paper

Q: Are you creating a digital twin? A: The spec model is a twin of the design, and the design model is the twin of the physical product.

Chart 5: Q: Does the input get simulated between design and spec model? A: Yes, inputs get simulated and the outputs are compared for compliance.

Chart 3: Q: What is meant by “When C is true”? A: C is an input to reach the goals (input condition to result).

Challenge in using Property Model Methodology (PMM) from another user is that users want to do straight to blue box (Design Model) and not flow down from red box (spec model). Per Pascal they are doing some training/coaching to ensure that flow down is done.

Charts: [What-can-PMM-bring-to-DDMS\_V03](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-25-20%20Saturday%20Content/What-can-PMM-bring-to-DDMS_V03.ppt)

4) SETDB Requirement Tool Outbrief and Discussion

Presenter: John

Chart 4: The mock up is still out there that can be used and provide comments. Can access it thru the link on chart 6 <https://www.incose.org/setdbtest>

Status on the db “New” means it is initial information from supplier. Once it is vetted thru applicable WGs then it would go to supplier.

Q: Is API one of the questions? A: Yes, the questions/features identify what APIs are supported, but only based on question asked, not a free form for vendor to add their own API support. There is a comment field where the vendor could provide additional information.

Q: Could the information be sorted/filtered to show how tools overlap? A: Yes, but future development is to allow this, currently does not.

Q: Do you have to be an INCOSE member? Yes, INCOSE member or PPI member to get access.

Q: Have the process/definition been established on how to approve a vendor? No, not yet, that will be started tomorrow.

**ACTION: Chart 8: RWG homework to determine if the recommended categories are really needed. 1) If the category is considered valid, 2) then RWG need to provide the questions for the survey.**

Q: When can vendors start to answer questions? A: June 1, 2020 is when vendors could go into db to start answering the questions.

Charts: TBD

# 1/26/2020 RWG 13:30 sessions

a) Relationship between business requirements and system requirements

Presenter: J.D Baker

Request for Requirement folks to review and comment in RFI by February 24, 2020.

RFI at OMG.org>Specifications>RFI/RFP

Charts: [business\_req\_iw\_2020](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-26-20%20Sunday%20Content/business_req_iw_2020.pptx)

b) IBMs Requirements Quality Assistant

Presenter: Jim Marsh

“AI”: is more Assisted Intelligence, and not fully automated

Also looking at requirement sets that look for duplication or conflicts

RQA is being trained internal to IBM using Watson, and internal body of knowledge. Does not reach out to outside inputs. They do allow users to also do their own learning.

Q: Could it be taught to pick up on identifying missing set of requirements like “ilities” A: Yes, it could be learned. Working on being able to validate links, not just does link exist, but is it a good link.

Q: Can the tool score like 1000 requirements? A: Yes, batch sets coming out this year. Currently it can do about 200.

Q: Do the algorithms have pausing? A: Not quite there yet.

Q: Is this server based? A: Currently is cloud based, but coming out this year is server based version.

Q: Any advice on the Guide to help tool vendor utilize the content into creating a solution? A: Not sure, the tool is very learning based on examples, not based on templates.

Q: Could the learned info be exported? A: Yes, the tips and all are attributes that can be exported.

Q: Does this tool track volatility/changes? No, not this tool, but native DOORS and DNG can track requirement volatility.

IBM request any requirements that RWG would like to provide as input, as well as input on “like to have”.

Charts: [INCOSE IW 2020 Requirements Quality Assistant](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-26-20%20Sunday%20Content/INCOSE%20IW%202020%20Requirements%20Quality%20Assistant.pptx)

c) Multi-Domain System Engineering Interoperability

Presenter: Greg Pollari

Charts: [Multi-Domain Systems Engineering Interoperability Rev C](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-26-20%20Sunday%20Content/Multi-Domain%20Systems%20Engineering%20Interoperability%20Rev%20C.pdf)

d) Use of Model Based Tools for Verification

Presenter: Raymond Wolfgang

Charts: [IW2020\_Wolfgang\_Model-Based-Qual\_v2](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-26-20%20Sunday%20Content/IW2020_Wolfgang_Model-Based-Qual_v2.pptx)

e) Overview of the RWG Products

Presenter: Lou Wheatcraft

Charts: [RWG NRLM HB Overview IW2020 Presentation 012620](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-26-20%20Sunday%20Content/RWG%20NRLM%20HB%20Overview%20IW2020%20Presentation%20012620.pptx)

# INCOSE IW 2020 Notes: 1/27/2020 Morning session at 9:00

a) SE Handbook Go Forward

Presenter: Dave Walden

INCOSE SE Handbook 4.1 BMA, 4.2 Stakeholder needs and requirement definition, 4.3 System requirements definition.

Clarification, that SE Handbook editors are looking for IV&V WG to provide IV&V inputs, so the RWG will need to be lock and step with IV&V and provide inputs thru them or along with them.

SE Handbook to summarize concepts and point to other INCOSE products for details.

Some concerns on having the handbook point to a lot of other products, because then buyers then have to purchase all the referenced products.

Keep in mind for inputs to be county and domain neutral.

Release target is IS2023.

Requirements Management process area is an area suggested to be added. For it to match 15288, maybe it falls under the Project access and control area.

**ACTION: Tami to send RWG outbrief given to CAB. Send to Dave Walden and request charts presented.**

Contact Art Pyser for SEBOK information and trying to find out who the SEBOK requirements section author is.

Connect site used for editors, authors, and reviewers.

Charts: TBD

b) GDMR Overview

Presenter: Kevin Orr

**ACTION: Add “Need” to the title of the Guide. “Guide to Developing and Managing Needs/Requirements”**

Charts: [GDMR Status IW2020](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-27-20%20Monday%20Content%20-%20Guide%20Work/GDMR%20Status%20IW2020.pptx)

# INCOSE IW 2020 Notes: 1/27/2020 Afternoon session at 1:30pm

a) GVV Overview

Chart 2: How for guides would be like a template, where How for Handbook is more top level.

**ACTION: We should update this bullet going forward, about the needs/requirements HB having “how”.**

Chart 2: Q: Is there a new ontology being development? A: Not creating anything “new”, but ensuring consistency with existing ontology.

Chart 3: Concern was that “Writing Requirements and V&V were so far apart”, maybe draw the “Vee” in the background. Also concern that V&V here is very focused on “Right side of Vee”.

Q: Where is the verification method and statement captured? A: In the NRLCMHB, but also part of GDMR as a complete requirement statement should come with Verif details.

Some participants may request IP form early as required by their IP process.

Design Verification is on the left side of the Vee, so the GVV will touch both sides of the Vee.

**Recommendation/ACTION: Use diagram from Guide to writing requirements to show a “roadmap” of what is in the individual guides.**

**ACTION: add model based approaches and product line sections**

Concern: That V&V guide is not addressing V&V info from SE HB, seems only part of Requirement V&V. The NRLCMDB will address full lifecycle, hence what is in the GVV now will move to NRLCMDB.

Comment: Guide division could be what SE does versus T&V team does.

Could we change “Requirement Verification” to “Requirement Quality”

**ACTION: Add as a Reviewer: Emmanuelle Garcia has volunteered to be a reviewer for GMDR and GVV** **emmanuelle.garcia@airbus.com**

Guides will walk reader/user thru the process steps and provide artifacts/templates to follow the step.

Charts: [Guide-VV\_Status IW2020](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-27-20%20Monday%20Content%20-%20Guide%20Work/Guide-VV_Status%20IW2020.pptx)

# INCOSE IW 2020 Notes: 1/28/2020 Morning session at 8:00

a) Needs and Requirements Life Cycle Management Overview

Presenter: Lou Wheatcraft

HB to be more of the Why and a Body of Knowledge.

Recommendation is to drop the word “Handbook” so there is no confusion with INCOSE SE HB.

Consensus on the title “Needs and Requirements Life-Cycle Manual”

Concern: Not clear that all V&V activities are included

Concern: Would like to ensure that requirement allocation/flowdown is done on all requirement types (not just function/performance) requirements. NEED TO CONSIDER THIS IN THE GMDR ALSO.

Chart 13: Suggestion Change purple box from “System” to “System of Interest”

Charts: [RWG NRLM Overview IW2020 Presentation 012820](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-28-20%20Tuesday%20Content/RWG%20NRLM%20Overview%20IW2020%20Presentation%20012820.pptx)

b) Approach Options for Requirements When using COTS (T. Katz)

Presenter: Tami Katz

Q: Do you still have to provide traceability to all the requirements or a smaller set? A: Yes, if we designing it, no if COTS and per “waiver” it allows use of COTS that may not meet 100% of design requirements.

Q: Have you ever considered purchasing a unit and opening it up, if a supplier is not forth coming with data? A: Yes.

Q: Are you only sourcing with US Firm? A: No, some are international.

Q: Do you get COTS that do more functionality than required? A: Yes, and there are cases where the extra functionality is inhibited.

Q: How do you deal with propriety data, or those that do not provide any data? A: We may classify it as high risk, may search for other suppliers, or may purchase unit and understand what it can do.

Q: Who makes the call on accepting the technical risk? A: Engineering Review Board. If cost/schedule is too high, then will bump up to Program Review Board.

Q: Have you ever been in a case where the COTS was still in development? No, not in our case. Discussion identified that in this case, there is some ability to have discussion with COTS vendor to talk interfaces.

Comment: This presentation is a good example of possible format for the guides with steps (chart 8) and process (chart 7). Not a dictation but a possible example/solution.

Charts: [10.2.1 COTS Evaluation - Katz](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-28-20%20Tuesday%20Content/10.2.1%20COTS%20Evaluation%20-%20Katz.pptx)

Paper: [Eval of COTS Hardware Assemblies for Space Systems](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-28-20%20Tuesday%20Content/Eval%20of%20COTS%20Hardware%20Assemblies%20for%20Space%20Systems.pdf)

c) Group Discussion - ​Approaches to Levying Requirements for Subcontracts compared to Internal Teams ​(open forum)

Discussion Lead by Tammi Katz

For internal teams, there is a push for how we can use Agile into it, and it boundary can be established, they can be less formal, and just show they meet design. Advantage to internal is there can be internal communications.

For internal teams was there any efficiently on the roll up of information being informal.

3 things needed: Contract, T&C, Spec. With internal team, typically T&Cs not needed.

Data exchange with internal team can be more efficient.

Concept of model based requirement (strictly data base like, no document exchanged) or SysML type model with requirements within that model.

When using model, it should be clear that only behavior input/output provided. Keep in black box like.

Some industry always have to have paper, that come from something like DOORS. They did not levy to internal teams, the team wrote their own requirements based on allocation. But the system team made sure that all requirements were captured in those internal teams.

Preference to use “communicating” versus “levying”. The internal team, users, and V&V are brought into the requirement development process, so they understand rationale and intent of requirement. Collaborating (internal) versus Transactional (sub contract).

NASA Morpheous project used SharePoint for all requirement activity, never printed anything. Everything worked in SharePoint.

Loads, flight profiles, material restrictions as none shall statements. Maybe times this info was on drawings, and was difficult to trace to, and this was internal team.

Some internal teams it was easy, provide “link” to data and they ran with it. Yet other internal teams were like lawyers, and we had to give them everything and very transactional.

One example all would use centralized data from DOORS (except structural and software) to get their requirements. They all also used that info to populate their models. Structural dealt with the loads, flight profiles, ect. Software had most of their requirements within the code.

Charts: [INCOSE RWG IW2020 Reqt Int v Supplier Discussion](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-28-20%20Tuesday%20Content/INCOSE%20RWG%20IW2020%20Reqt%20Int%20v%20Supplier%20Discussion.pptx)

d) Group Discussion - Challenges of reflecting Reliability and Performance Requirements as a Function of Life Time (open forum)​

Discussion Lead by Lou Wheatcraft

Some discussion on if “Reliability” is to a specific value, or just pass/fail.

Reliability testing is cost driven, can not do it all, so must rely on analysis based on extrapolation.

Life at the beginning of a part can count against the life/reliability of the part, even after it is fixed.

Comment: The MTBF defines the maintenance interval. (Chart 2, sub-bullet)

Rocket reliability time is less important, but failure per launch is more important.

Charts: [Reliability and lifetime performance IW2020 Presentation 012220](https://connect.incose.org/WorkingGroups/Requirements/RWGIW2020/Shared%20Documents/1-28-20%20Tuesday%20Content/Reliability%20and%20lifetime%20performance%20%20IW2020%20Presentation%20012220.pptx)

Departing Remarks from Tami Katz

Thank you so much for your interaction and participation.

We will have more virtual meetings, monthly towards the end of the month.

First one will be in February

Send a note to Tami Katz if you would like to host a topic.

Will give an outbrief to the RWG distribution.

Thanks you Greatly, check out the SharePoint for the latest and greatest.