# Highlights Guide to Dev Mgt Needs Reqts Notes IW2021, 1-27-21

37 attendees

Ron Carson - split to two guides, content and activities are very different. CMMI and 15288 does this

Lou - Reqt mtg is split to several diff processes in 15288

From chat - ton of recommendations in there:

From Ron Carson to Everyone: 09:15 AM

Requirements Life Cycle Guide

From joselfernandez to Everyone: 09:17 AM

I agree with Karl Wiegers that requirements development+requirements managing is named requirements engineering.

From Mike Pafford to Everyone: 09:18 AM

FWIW. ONE way I keep Guide and Manual straight (for myself) is thinking "Guide for Education" and "Manual for Training and Use". Again. Just one way I keep straight the value and use of both.

From Terry Fitzgerald to Everyone: 09:19 AM

@Mike, I think that's a great way to differentiate the two

From Gordon to Everyone: 09:19 AM

Guide for Managing Requirements ( so substituting writing with managing)

From Mudit Mittal (BlueKei Solutions) to Everyone: 09:21 AM

Just like you have “Function before Form”, “needs before requirements” —> NBR Guide (acronym) :)

From Bruce Lerner to Everyone: 09:22 AM

Ahh, acronyms. G4RE

From Mudit Mittal (BlueKei Solutions) to Everyone: 09:22 AM

good one

From don mcnally to Everyone: 09:23 AM

I like GfRE

From Bruce Lerner to Everyone: 09:23 AM

<thumbs up>

From Lou Wheatcraft to Everyone: 09:23 AM

A key change is thinking “needs and requirements” rather than just “requirements”

From John Clark to Everyone: 09:24 AM

I also agree with Karl Wiegers and Jose Fernandes. In addition, I believe that requirements engineering also includes requirements writing (i.e., The Guide to Writing Requirements).

From Gordon to Everyone: 09:25 AM

yes Lou but the guide for writing requirements also includes needs so would we change that name too?

From Lou Wheatcraft to Everyone: 09:26 AM

A quality set of requirements is about 80% analysis and maturation of knowledge and 20% on how well a need or requirement statement is written.

From Mike Pafford to Everyone: 09:26 AM

Could Not agree with Lou more. The Primary Emphasis of my SE work-for more than five years-has been trying to capture (in Guides, Manuals, etc.) all of the Important Stakeholder-Centric collaborative effort that goes into capturing, developing, managing, sharing, and using that "Integrated Set of Stakeholder Needs".

From Lou Wheatcraft to Everyone: 09:27 AM

The underlying analysis and maturation of knowledge provides the underpinning from which the needs and requirements are derived.

From joselfernandez to Everyone: 09:31 AM

I agree with Ron. Develpment is more human based and management is more tool based.

From Gordon to Everyone: 09:33 AM

I think that Ron has a great point. We have separate chapters already so why not separate guides?

From joselfernandez to Everyone: 09:34 AM

Good requirements development is at highest level in CMM than requirements management.

From Mike Pafford to Everyone: 09:35 AM

This good conversation--is certainly Emphasizing the 'need' for more Actionable Knowledge on NEEDS capture, development, management, sharing, and use. Maybe a useful 'split' (but solid connection and overlap) might be NEEDS and REQUIREMENTS?

From Francesco Dazzi to Everyone: 09:38 AM

Are we moving away from the SE HB terminology: needs and requirements definition process?

From Mike Pafford to Everyone: 09:39 AM

As we all know Requirements 'work' includes At Least Requirements Analysis, Requirements Engineering, and Requirements Management. With Requirements Development being included in at least the RA and RE parts.

From Bruce Lerner to Everyone: 09:41 AM

Do requirements not transform also?

From Mike Pafford to Everyone: 09:41 AM

There is a LOT of Stakeholder-centric NEEDS Real Work-that Always takes place Before RA, RE, or RM.

From Lou Wheatcraft to Everyone: 09:41 AM

We engineer systems not requirements! Don’t want to put needs and requirements into a silo separate from other SE process areas all are closely dependent.

From Kirsten Helle to Everyone: 09:42 AM

I agree With Lou

From Cay Vandervelde to Everyone: 09:42 AM

me, too.

From aleksandrascalco to Everyone: 09:42 AM

Concur with Lou

From joselfernandez to Everyone: 09:43 AM

When we use visual models to extract or refine requirements we are engineering requirements.

From Rick Zinni (US Person) to Everyone: 09:44 AM

I don't agree with Lou. RE is part of the SE process. Its not a silo, rather it is an offshoot of GfWR.

From Bruce Lerner to Everyone: 09:45 AM

Is needs development really an engineering activity esp. for non-military/aerospace projects?

From joselfernandez to Everyone: 09:46 AM

architecting feeds requirements engineering and requirements engineering feeds architecting

From Swathi Utukuri to Everyone: 09:46 AM

Yes it is. In medical device industry, needs development is an engineering activity.

From Rick D. Hefner to Me: (Direct Message) 09:48 AM

I missed the opening. What is the purpose of this meeting?

From Eduardo Muñoz to Everyone: 09:48 AM

Agree. Pulled value for requirements...

From don mcnally to Everyone: 09:48 AM

Agree with Ron.

From Bruce Lerner to Everyone: 09:49 AM

Where does marketing exist in the medical needs elicitation process?

From joselfernandez to Everyone: 09:49 AM

Agree with Ron

From Todd Eberwine to Me: (Direct Message) 09:49 AM

You wanted lively discussion!!!

From Mike Pafford to Everyone: 09:50 AM

The Needs IPO (i.e., Stakeholder Plain Language Needs, Problems, Issues as IN, Collaborative Development as PROCESS, and Expected Capabilities or Integrated Needs) as OUTPUT) results in the Set of Integrated Expected Capabilities (i.e., NEEDS). It is this Integrated Set of Expected Capabilities/Needs from which All Requirements (HW, SW, PjM, etc.) are then developed.

From SAJID to Everyone: 09:50 AM

SE artefacts are enablers for a final product produced. So, when we are talking about something within the boundary of SE we should limit us there not the project management. The project management topics must come when we are talking about the integration of them.

From Eduardo Muñoz to Everyone: 09:50 AM

Yes John. In fact, if the faulty requirement is non negotiable, it should generate na addition while the Project is running. As soon as we identify that, the minor the cost and the risk...

From Mike Pafford to Everyone: 09:51 AM

The Stakeholder-Centric Collaborative Development of Needs, is Vitally Important for Any project to, "Get It Right, Right From the Start".

From Me to Everyone: 09:51 AM

if not speaking can you please mute so we can hear speaker? thank you!

From Lou Wheatcraft to Everyone: 09:52 AM

Agree Mike.

From Swathi Utukuri to Everyone: 09:52 AM

Yes marketing is the at the front end to gather the needs from the customers. But we system engineers actually write the needs and evaluate the validation-ability (Just made up that word) of every need and build the context of use around every single need.

From aleksandrascalco to Everyone: 09:54 AM

In DOD we are moving towards Model Based Systems Architecture Practice with Agile SYSE to get to Model Based SYSE. Would MBSE perhaps serve to address the Needs/Requirements challenges at the business level?

From Ingvar Wikström to Everyone: 09:55 AM

To produce requirements out of needs are a part of the engineeing of the system.

From Mike Pafford to Everyone: 09:56 AM

THEN (plan-driven world\_= SEs brought SE to Stakeholders. NOW (Lean, Agile world) = SEs need to work with Stakeholders --and bring Stakeholders into SE.

From Bruce Lerner to Everyone: 09:57 AM

So much like in the software world of the 80's since no one was doing requirements well (or with tools) the software discipline decided that they owned requirements.

Customer needs belong to the organization, not engineering.

From SAJID to Everyone: 09:58 AM

I agree with @Rick that SE aspects need to be addressed from the very top level of a project so that PM and SE integration become easier. Hence, there is a significant importance to have needs addressed properly. Including "Needs" in the title embeds the focus.

From Swathi Utukuri to Everyone: 09:59 AM

I agree with Bruce and Ingvar

From John Clark to Everyone: 10:00 AM

The title: Needs and Requirements Engineering includes V&V, aligns well with 15288 (para 6.4.2). the INCOSE SE Handbook (para 4.2), (both titled: Stakeholder Needs and Requirements Definition).

From Eduardo Muñoz to Everyone: 10:04 AM

Recall the multidisciplinary or transdisciplinary importance on building the requirements. I consider they should be aligned with needs, and that it is part of any Project, no matter what the sector is... Great discussion... thanks!

From Francesco Dazzi to Everyone: 10:05 AM

I suggest to change mindset from a process-centric approach to a principle-centric approach that enables to tailor processes to fit different contexts, domains, and environments

From Rick Zinni (US Person) to Everyone: 10:05 AM

Yes Swathi, I also agree with Bruce, but I think we need to induce some engineering discipline to developing those needs with the business.

From Bruce Lerner to Everyone: 10:05 AM

SE should demand quality Needs capture but not believe they are the ordained creators.

From don mcnally to Everyone: 10:06 AM

agree with Ron we need a common format

From Ingvar Wikström to Everyone: 10:06 AM

It is often i big difference if the system is originally a purchase or sold! That effects how is payed and by how. That however has not to do with the system.

From Bruce Lerner to Everyone: 10:09 AM

Yes, Rick. I absolutely agree that an organization should have a business process that defines responsibilities and supports interaction. That level of definition is often associated with engineering but not in uniquely in engineering's scope.

From Paul Davies to Everyone: 10:09 AM

BUT the Handbook is just about to undergo a major rewrite!

From leardi carlo to Everyone: 10:10 AM

Absolutely, the two initiatives go in parallel

From Mike Pafford to Everyone: 10:12 AM

I think we all know, that current and modern systems engineering guides and manuals, in reality have to 'accommodate' at least governance included in SE Handbook, SEBoK, 15228--but also SWEBoK, 12207, and PMBoK.

From Francesco Dazzi to Everyone: 10:13 AM

I am curious to understand the commonalities and differences with the main book (Requirements Engineering Fundamentals) adopted by the International Requirements Engineering Board.

From Francesco Dazzi to Everyone: 10:13 AM

I am curious to understand the commonalities and differences with the main book (Requirements Engineering Fundamentals) adopted by the International Requirements Engineering Board.

From don mcnally to Everyone: 10:14 AM

Seems like the organization of this document should align with the organization of Lou's document.

From Gordon to Everyone: 10:15 AM

@francesco IREB is just a company - it has no official standing - despite the title

Agree with John perspective. Glad that the manual is grounded on that principle.

From aleksandrascalco to Everyone: 10:17 AM

Yes, I like the trend of Model Based Systems Architecture Practice with Agile SYSE to get to Model Based SYSE. Additional focus on MBSE is beneficial.

From Bruce Lerner to Everyone: 10:17 AM

What exactly is a "model' of need or set of needs?

From Mike Pafford to Everyone: 10:18 AM

Our "Resilient Hospital Reference Model MBSE Project" has Always considered MBSE as meaning "Model-Based Full SE VEE" (so to speak). We're already using that idea as we work with stakeholders in Model-Based Concept Definition (MBCD).

From leardi carlo to Everyone: 10:18 AM

How-to means also put focus on: digitalization opportunities. data science advancements and Virtual/Augmented reality new approaches.

From Bruce Lerner to Everyone: 10:19 AM

So a "model' of Needs supports visualizing or testing of Needs?

From Me to Everyone: 10:20 AM

@Bruce - I have done this with use cases and mission activity diagrams to show our needs, that are used then to derive requirements

From aleksandrascalco to Everyone: 10:21 AM

Moving to a requirements modeling tool is valuable in traceability, and identification of impact on system design and architecture.

From Rick Zinni (US Person) to Everyone: 10:21 AM

Models are a tool to help analyze and derive requirements at a lower level.

From John Shelton to Everyone: 10:21 AM

An SE model can be thought of as a compendium of everything known about a system and its developing organization. In early days, important things to include in that are ontology of needs, and stakeholder definition.

From joselfernandez to Everyone: 10:22 AM

I agree with Rick. From models we extract requirements and models refine requirements as well.

From Gordon to Everyone: 10:22 AM

I think that multiple small (20 pages max) guides is better than one big one - can we not split up the various topics on Requirements into small chunks?

From aleksandrascalco to Everyone: 10:23 AM

Augmenting guides with greater emphasis on modeling and simulation would improve requirements as a part of the overall system.

From Mike Pafford to Everyone: 10:23 AM

@Bruce (and Everyone). In our RHRM MBSE project, we're finding our Healthcare Key Stakeholders really understand (and like) our modeling and working with them on 1) Visualizing their Needs and 2) using the Inspection, Analysis, and Demonstration Testing methods.

From Rick Zinni (US Person) to Everyone: 10:23 AM

Maybe a future consideration. I think we need to get something published and get feedback. The original ask was 20 pages of actual content, but I am not sure that was realistic. So, perhaps you may be correct. and we will split the guides up even further going forward. It will depend on how they link to each other.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Lou - NASA defines the management as oversight of activities done by engineering team; functions: manage development process, manage change, managing allocation budgeting and traceability for completeness.

Rick Z - development is a piece of the management

Ron - prefer to focus on the engineering aspect, not the logistics

Guide for Needs and Requirements Engineering

Aleksandra Scalco - see value of having Needs identified, and advocate requirements engineering; actor stating a need, and actor generating a requirement to fulfill a need, are two perspectives

Lou - focus was so much on requirements in past we are looking to bring focus to other aspects; point is making customer happy and getting a system to meets its intended purpose..etc. Trying to bring focus to Needs.

Todd Eberwine - not sure we need it in the title - the very concept of requirements is based on Needs.

John Shelton - needs are not the goal, they are an integral part of the effort.

Ron Carson - multiple stakeholders, and both verification AND validation are needed (not just validation to customer, but address the company needs too which is a verification activity in a PM perspective)

Lou - companies like SpaceX work less on the requirements and to the needs, and this is a valid approach too

Todd Eberwine - what if we get the needs perfect and mess up the requirements? The requirements drive the development - need to get this aspect right too.

Ron - a big challenge is getting budget to development reqts, not just copy/paste, if we start showing 'another process' to instantiate needs before requirements, could not get budget for first aspect, how to get for Needs documentation? In corporate world this is not realistic. More processes the less likely it will be to get implemented.

John Shelton - it was mentioned we work for a project mgt paying our efforts. The project will proceed and then be done - if there is a validation effort to address faulty needs, it will be addressed in a separate project. We as project members, we care the most of reqts, needs are explored at higher level that floats across projects.

Rick Z - industry does not really understand Needs, people say it is done at business level and not engineering level; we are trying to get engineering more into this aspect; legitimize this as important, to get it to start being funded and advocated. The guides can help legitimize this effort. This vision is that we have the process and tools to enable it. Biggest reason people don't do reqt mgt is that it is hard, having tools helps people to get there quicker and helps them.

Francesco Dazzi - we should be general for multiple domains, focus on principles to tailor by domain experts; a concern on standardize terminology and best practices to enable sharing; are we moving away from terminology in SE Handbook and IEEE 15388? Does not like discussion on prioritizing needs and reqts, depends on industry.

Lou - described the work ongoing with SE Handbook and IEEE standard.

Format question:

Ron - IPO approach is fine, must be more granular level of detail than 15288; common format is more accessible (when going from one doc to another it is familiar)

Bill Bearden - people are putting too much emphasis on 15288, ton of processes in there; only 3 reqts related processes; the heart of technical design there is likely 5-6 processes; The guides RWG are doing don't have to tie to 15288 directly, they are much lower level. Requirements Engineering term does not capture full picture of scope of effort, it is a team effort with other aspects.

Ron - if publishing guide on behalf of INCOSE content should be traceable to SE Handbook.

Bill - SE Handbook is accepted state of practice, there is more going on in field than handbook addresses

Paul Davies - handbook is undergoing rewrite.

Ron - two years ago there was much discussion on the outlines; RWG approved the outlines; now they have evolved; Ron would like to have a look at new outlines to ensure the content makes sense; since we are doing a major revision we owe it to ourselves to have RWG look at outline and compare to manual and ensure everything is covered.

Lou - initial outlines developed in assumption of no manual - as need to provide more detailed concepts the outlines became OBE; the guides are now evolved from original concept.

John Shelton - discuss MBSE as part of this; the tenant of MBSE is that we base our SE practice on a model;

Lou - that is a foundation for manual is model usage and data driven decisiosn

Tami - could use an MBSE practitioner review of manual, and a rep to MBSE discussions to ensure alignment; John Shelton is a volunteer to help RWG in this area

Lou - encouraging other domains for domain specific guides in these areas

Ron - Sandie F - model based systems engineering IS Systems Engineering; Ron's focus is to get improvement in requirements, need to get away from thinking of requirements as 'sentences' and look at them as pieces of engineering; actors, trigger, performance attributes. Cannot wait for MBSE evolution, can start thinking data driven now, hopefully tools will catch up