Making Requirements Elicitation Traceable

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An Overview...

Meeting customer needs:
- Problems & progress
- Importance of RT

RT types & their potential:
- Why
  - Make reqs elicitation traceable
- How

Critical details to obtain & render traceable:
- Contribution structures
- Proposed approach

Questions for workshop
Why Needs Are Not Met...

Obtain Specify Use
Identification & involvement
Transcription
Techniques & practice
Emergence & change

Viewpoints

Progress In Meeting Needs...

Assurances?
Reqs elicitation:
- Obtain needs
Reqs description:
- Record needs
Development methods:
- Use needs

Guarantees?
Connection between elicited info, derived reqs & subsequent artifacts
Reqs traceability:
- Augment needs
- Meet needs
- Change needs
Some Terminology...

“Requirements Traceability (RT) refers to the ability to describe & follow the life of a requirement in both a forwards & backwards direction”

(i.e., From its origins, through its development & specification, to its subsequent deployment & use, & through all periods of on-going refinement & iteration in any of these phases)

Some More Terminology...

“Post-RS Traceability is concerned with those aspects of a requirement’s life that result from its inclusion in the RS”

(i.e., Requirement deployment)

“Pre-RS Traceability is concerned with those aspects of a requirement’s life prior to its inclusion in the RS”

(i.e., Requirement production)
Pre-RS & Post-RS Traceability...

Reqs artifacts produced (related to production)  
Reqs artifacts produced (related to deployment)

Pre  
Post

Persistent RT Problems...

Traceability

Of what (informational requirements) & In what way (access & presentational requirements)

Depends on

Who wants it (user characteristics) Why they want it (task characteristics)

When they want it (project & contextual characteristics)
Crux Of RT Problems...

....mmm.... No Can Do

Can you help me locate & access personnel?
It is a fundamental working practice...
I need to back up & augment info!

Traceability Of Requirements Contributors & Contributions...

Model contribution structure underlying reqs:

- I can identify sources of reqs-related work
- We can identify sources of reqs
- I can trace personnel
- I can identify sources of reqs-related info
- We can locate personnel
Our Approach (1)...

Define contribution format of artifact:

![Diagram showing Artifact, Principal, Author, Documentor, P, A, D, with relationships:
- Contributed_by
- Contributed_to]

P: agent whose position or belief is established by the information the artifact expresses
A: agent responsible for choosing & organising the content & structure of the artifact
D: agent responsible for physical manifestation of the artifact (i.e., captures or records it)

Our Approach (2)...

Contribution format of artifact & internal components

PAD agents:

![Diagram showing Artifact, P, A, D, with relationships and arrows]

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Our Approach (3)...

Infer contribution roles of agents wrt artifact:

- Sponsor
- Deviser
- Ghost Author
- Nominal Author
- True Author
- Relayer

Our Approach (4)...

Infer agent commitment to artifact

Who to involve/inform in queries/changes:

- True Author: ✔ Physical appearance ✔ Structural form ✔ Anticipated/realised effect ✔ Semantic content
- Deviser: ❌ Physical appearance ✔ Structural form ✔ Anticipated/realised effect ✔ Semantic content
- Relayer: ✔ Physical appearance ❌ Structural form ❌ Anticipated/realised effect ❌ Semantic content
Our Approach (5)...

Infer more about types/degrees of commitment

Qualify PAD status:

```
a2
  xy
  req abc
```

```
a1
  xyz
  (see chpt. 4):
```

```
  refer
  elaborate

  copy
```

Summarising...

Problem:
Tracing required details about reqs elicitation process - Hinders reqs production & refinement

Contribution structures:
Fine/rapid location of personnel to perform activities & address defects
Potential for continuous reqs (re)-definition & (re)-assessment
Questions...

What elicitation details typically get documented:
- How, when, why used/by whom?

Which techniques/tools couple details of elicitation process with end products?

Our approach: Scaleable? Distinguishable?

How extract, couple & use contributor details?

How currently account for different capacities in which RE participants provide info?

Now over to you...