



Can we SPARK it? Well...we'd like to but...



Rod Chapman
Praxis High Integrity Systems

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Contents

- Some experiences with failing to sell SPARK...
- Contributions to the Verified Software Repository
 - A brief update

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Selling SPARK

- In its application domain (e.g. embedded, hard real-time, critical), the technical argument is easy.
 - We can always win over the techies.
- We mostly fail to deploy SPARK for non-technical reasons.

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(Not) selling SPARK – the top 5 excuses

- Process-ism
- Change, disruption, inertia
- Magics, wizards, snake-oil...
- Procurement/funding
- The A word

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Process-ism

- “We’re CMM Level 5, so all our stuff in great.”
- “Programming languages don’t matter because our process is so good.”
- Trying to speed up code/test/debug is still pervasive.

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Change, disruption, inertia

- SPARK is disruptive – it means changing many aspects of development process to be used effectively.
- This scares project managers.
- Doing nothing is seen as lower risk than changing your ways.
- Larger organisations exhibit massive political and process inertia.

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Magics, Wizards, Snake-oil...

- A market worth several billion dollars a year...
- Most products don't deliver what they say on the tin...
- To make a lasting difference, a real change of lifestyle is needed.

- Is this software tools or dieting?



Magics, Wizards, Snake-oil...

- It's hard to differentiate oneself from the Wizards.

- "SPARK is like jazz – hard but worth it in the long run!"
 - Telling people we *won't* instantly solve all their problems.



Procurement/funding

- In some industries, there is (currently) little pressure to do any better.
 - We have zero SPARK customers in medical, automotive, telecoms etc.
- Procurers write contracts that allow suppliers to deliver a defective product.
- The FAA *laughed at us* when we suggested asking for a warranty.
- "If all software is junk, we might as well buy cheap junk..."



The A word...is "Ada"

- "We don't do Ada..."
- "We can't hire Ada programmers..."
- "No university in Texas teaches Ada..."
 - (honestly...guess which project!)
- Recruitment focus remains on tools/technologies/languages rather than skill and domain knowledge.



Some lessons

- Mere technical strength is not enough to get beyond the early adopters.

- Packaging and presentation are really important
 - e.g. making the maths "disappear"

- Success is not the same as dominance.



Some good news...

- We're still here...

- Enough people *do* care to keep us in business. SPARK is growing.

- Security has changed everything.



The Verified Software Repository

- Last December, I mentioned Tokeneer
 - a system we had developed for NSA.
- Why Tokeneer?
 - It has formal-stated (Z) security requirements, functionality and design - in line with CC EAL5.
 - The "core" of the system is 100% SPARK.
 - It was constructed to be amenable to proof.
 - Several "interesting" proofs remain to be done - remaining security properties for instance. Lots of interesting challenges here.
 - Praxis can donate tools and support to the repository and to universities.



The Verified Software Repository

- Tokeneer update...



Questions?