

# TestNet – Exploratory Testing

Boost your testing power with exploration

Pascal Dufour & Huib Schoots, Oktober 2013

# Acknowledgements

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- Some of these slides are taken from the Rapid Software Testing course created by James Bach and Michael Bolton.

[www.satisfice.com](http://www.satisfice.com)

[www.developsense.com](http://www.developsense.com)

- The test machine exercise is made by James Lyndsay.

[www.workroom-productions.com](http://www.workroom-productions.com)

- Many of the ideas in this presentation were also inspired by or augmented by other colleagues including Jon Bach, James Lyndsay, Elisabeth Hendrickson, Markus Gärtner, Sigge Birgisson, Henke Anderson, Paul Holland, Rikard Edgren, Trish Khoo, James Bach and Michael Bolton.

# Agenda TestNet – 31 oktober 2013

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- Warming up oefening: Test Machine
- Korte presentatie Exploratory Testing & Session Based Test Management
- Oefening Sessions & Charters
- Test ronde 1 & Debrief Test ronde 1
- Test ronde 2 & Debrief Test ronde 2
- Test ronde 3 & Debrief Test ronde 3
- Wrapup
- Q & A

Uiteraard met zoveel mogelijk ruimte tussendoor voor vragen en discussie

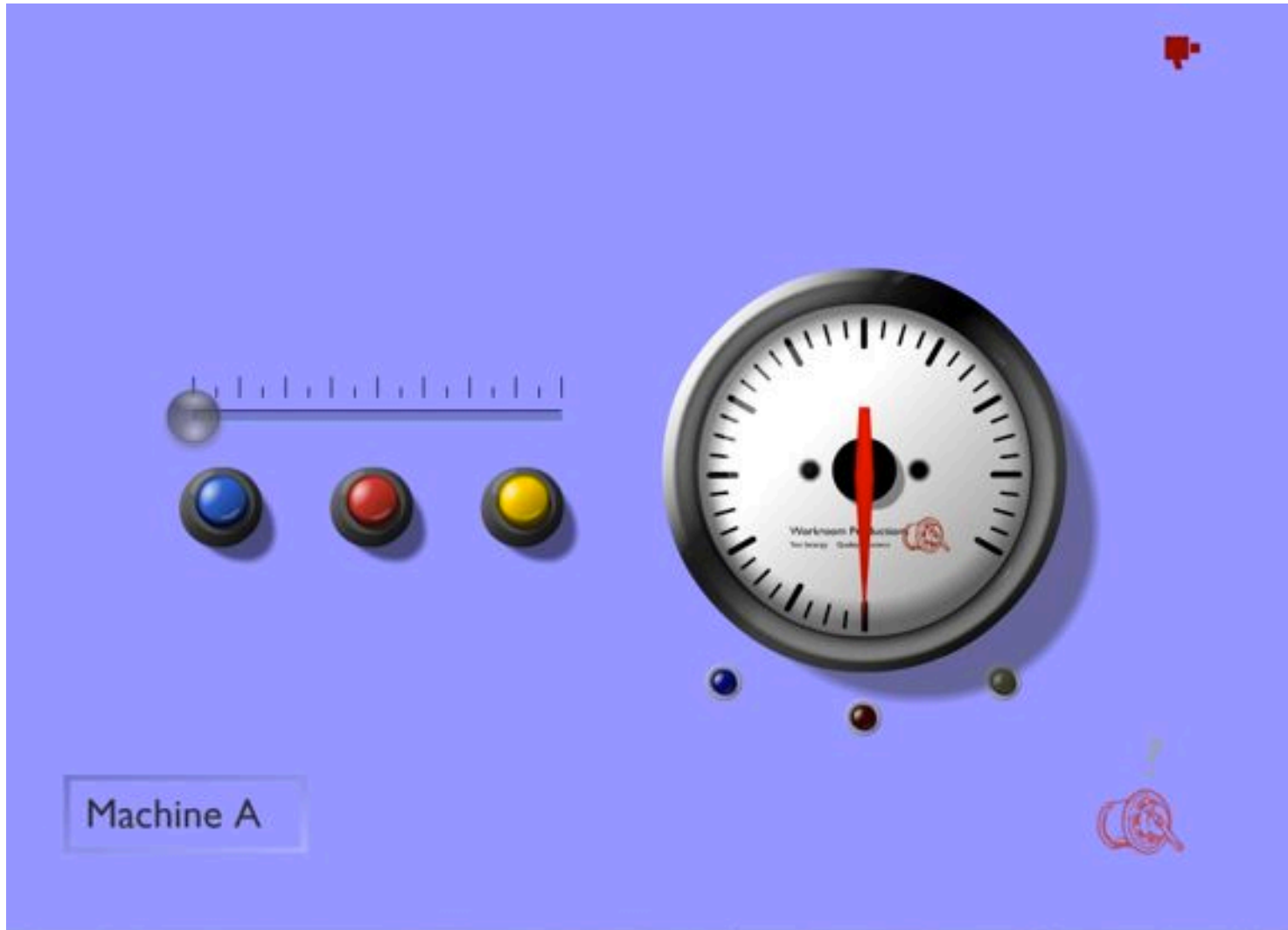
# Check

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Is dit wat jullie willen leren?



# Exercise Test Machine



# Exploratory Testing & Session Based Test Management

# Exploratory Testing

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“A style of software testing that emphasizes the personal freedom and responsibility of the individual tester to continually optimize the quality of his/her work by treating test-related learning, test design, test execution, and test result interpretation as mutually supportive activities that run in parallel throughout the project”



# Exploratory Testing

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“An approach to software testing that emphasizes the personal freedom and responsibility of each tester to continually optimize the value of his work by treating learning, test design and test execution as mutually supportive activities that run in parallel throughout the project.”



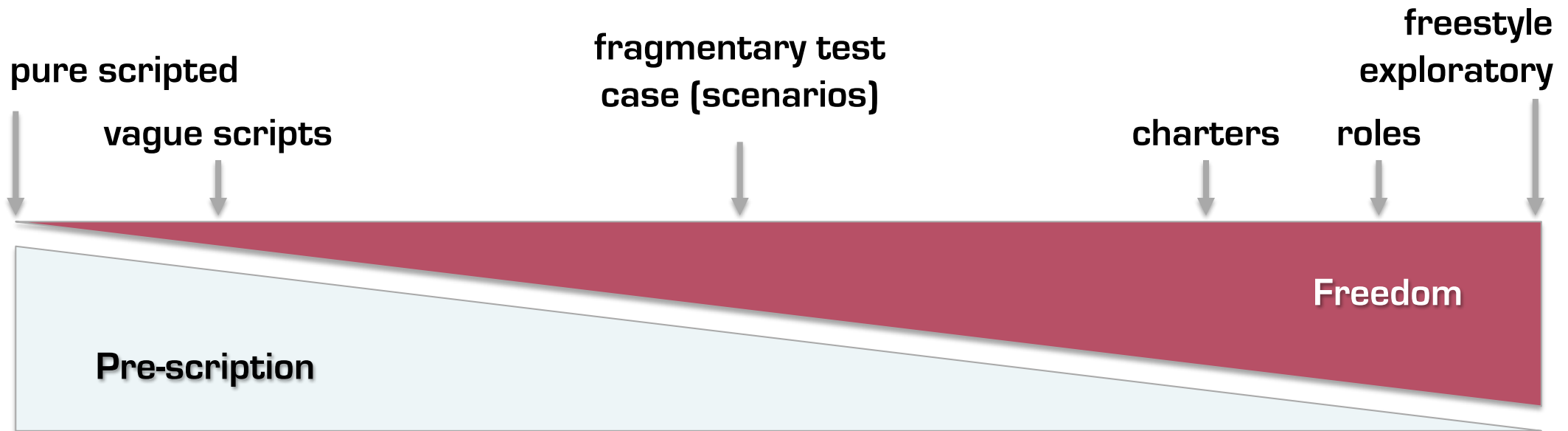
“Simultaneously designing and executing tests to learn about the system, using your insights from the last experiment to inform the next.”





# Exploratory Testing

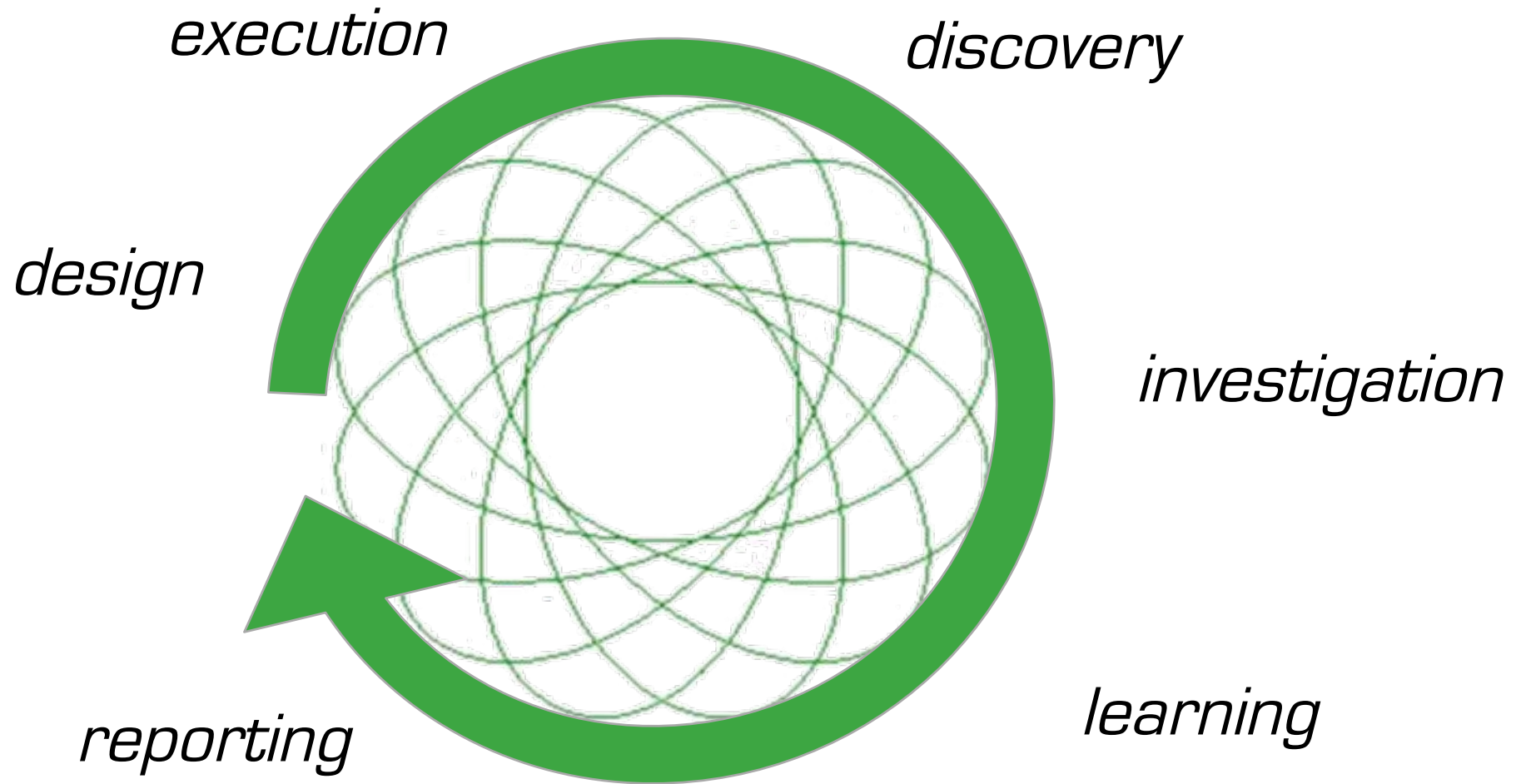
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*Source: Telling Your Exploratory Story by Jon Bach*

Exploration: searching for value and risk

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*Source original picture: Two futures of testing by Michael Bolton*

# Questions About Exploration...

*arrows and cycles*

Where does  
exploration  
come from?

What happens when  
the unexpected  
happens during  
exploration?

What do we do  
with what we  
learn?

Will everyone  
explore the same way?



Source: Rapid Software Testing by James Bach & Michael Bolton

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# Questions About Scripts...

*arrows and cycles*

What happens when the unexpected happens during a script?



Source: Rapid Software Testing by James Bach & Michael Bolton

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# Answers About Scripts...

*arrows and cycles*

What happens when the unexpected happens during a script?

Where do scripts come from?

What do we do with what we learn?

Will everyone follow the same script the same way?

Source: Rapid Software Testing by James Bach & Michael Bolton

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# You can put them together!

*arrows and cycles*

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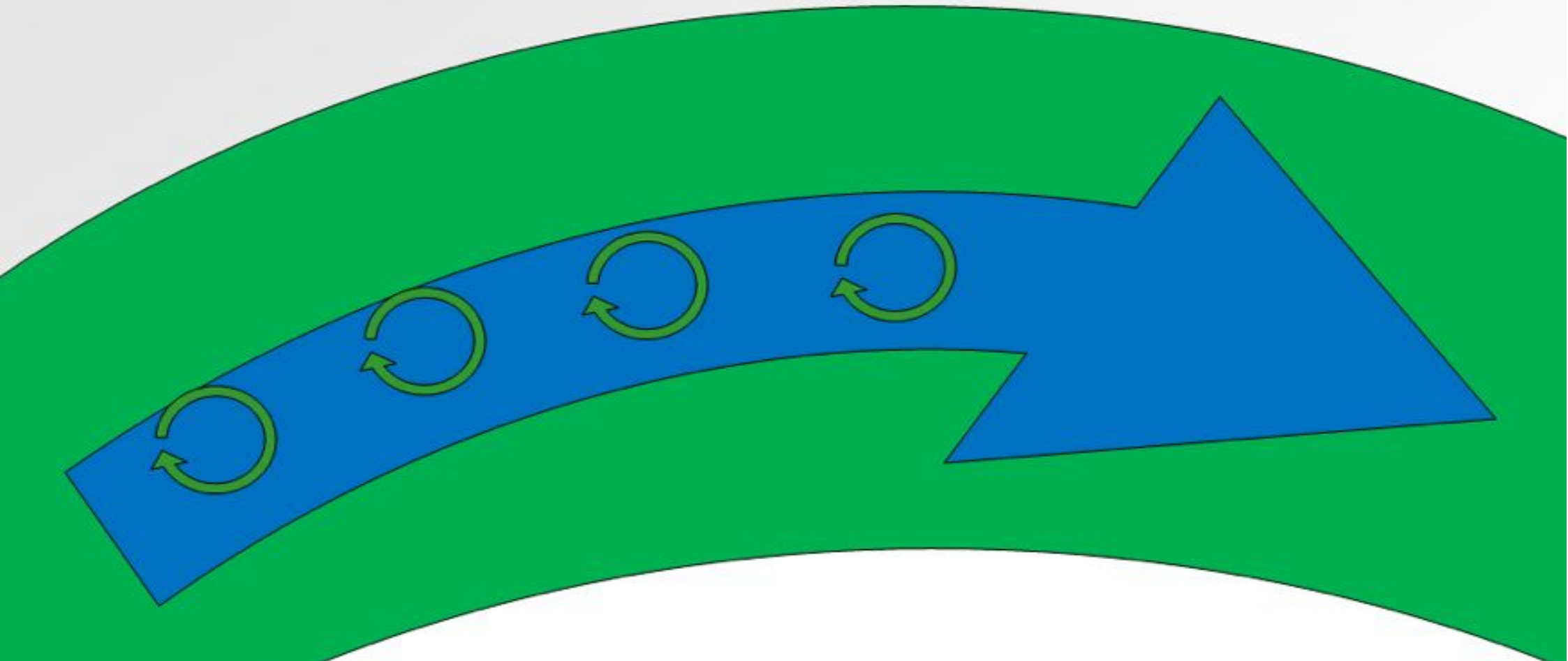
**SCRIPTED**  
(task performing)

Source: Rapid Software Testing by James Bach & Michael Bolton

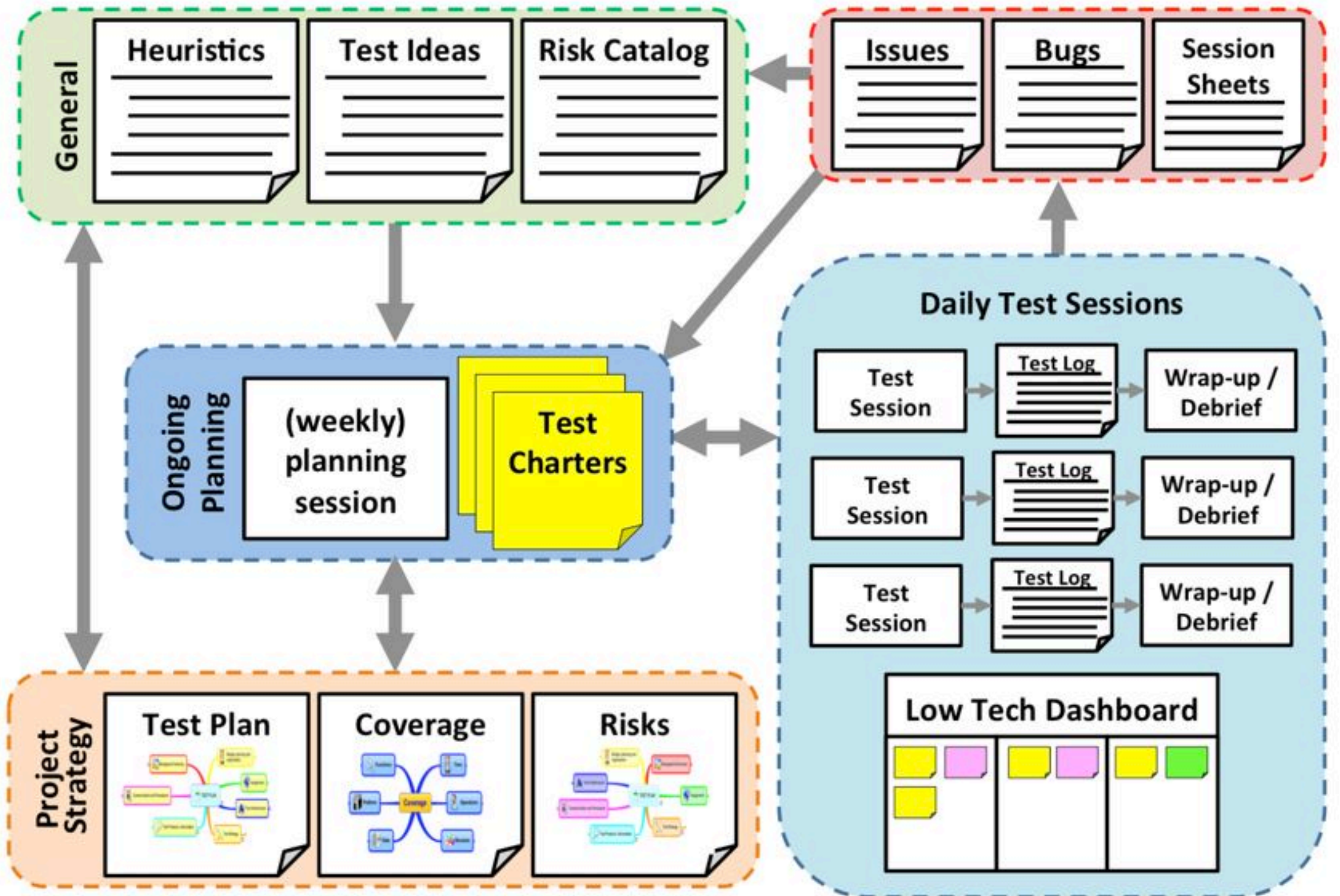
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# You can put them together!

*arrows and cycles*



Source: Rapid Software Testing by James Bach & Michael Bolton  
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# NS Reisplanner

How does the product interact with time? Any relationship between the product and time.

## Time

- overgang naar zomer/winter tijd
- datumovergang
- verstrijken van tijd, wat doet het met reisadvies?

What does the product do? Everything that the product does.

## Functions

- Test all stations
- Test several addresses
- Test several postcodes
- Andere locaties
- Via
- Datum selecteren
- Retour  Zonder korting  Met korting
- Enkele reis  Met korting  2e klas
- Retour  Met korting  1e klas
- enkele reis  Zonder korting  1e klas
- Prijsberekening
- Sporen  details  Check: vertrek/aankomst/aankomst/reistijd  Correct?
- Alle opties opgenomen?  Volledig?
- Reisschema
- Koop kaartje

How the product will be used / How do people actually use the program?

## Operations

- Millions of users
- 24/7 available

Everything on which the product depends (and that is outside your project).

## Platform

- Geen specifieke tests

What are the pieces and how do they fit together? Everything that comprises the physical product

## Structure

- Dropbox  Selecteren met muis  TAB en pijltjes toetsen
- Tekstbox  Oneindig veel karakters
- Diakrieten
- Zoeken op halve invoer  UTRE --> alle stations die beginnen met met UTRE...
- Radiobutton  Selecteren met muis  TAB en pijltjes toetsen
- Zoekfunctie (TOM TOM)
- Datum zoeker
- Datum veld  Dates
  - Normale data  Door de weekse dag  Weekenddag  Dag in vakantieooster
  - Special dates  29/2  Schrikkel jaar  25/12  1e kerstdag
  - Ilegal  30/2  29/2 buiten schrikkeljaar
- Tijd veld  Tijd
  - Normale tijd  Ochtend  Middag  Avond
  - Speciale tijden  Midden in de nacht
  - Ongeldig  12:61  25:01  100:100
- Knop
- Detail info

What does the product do things to? Everything that the product processes.

## Data

- Geen specifieke tests

### Plan uw reis

Van

Naar

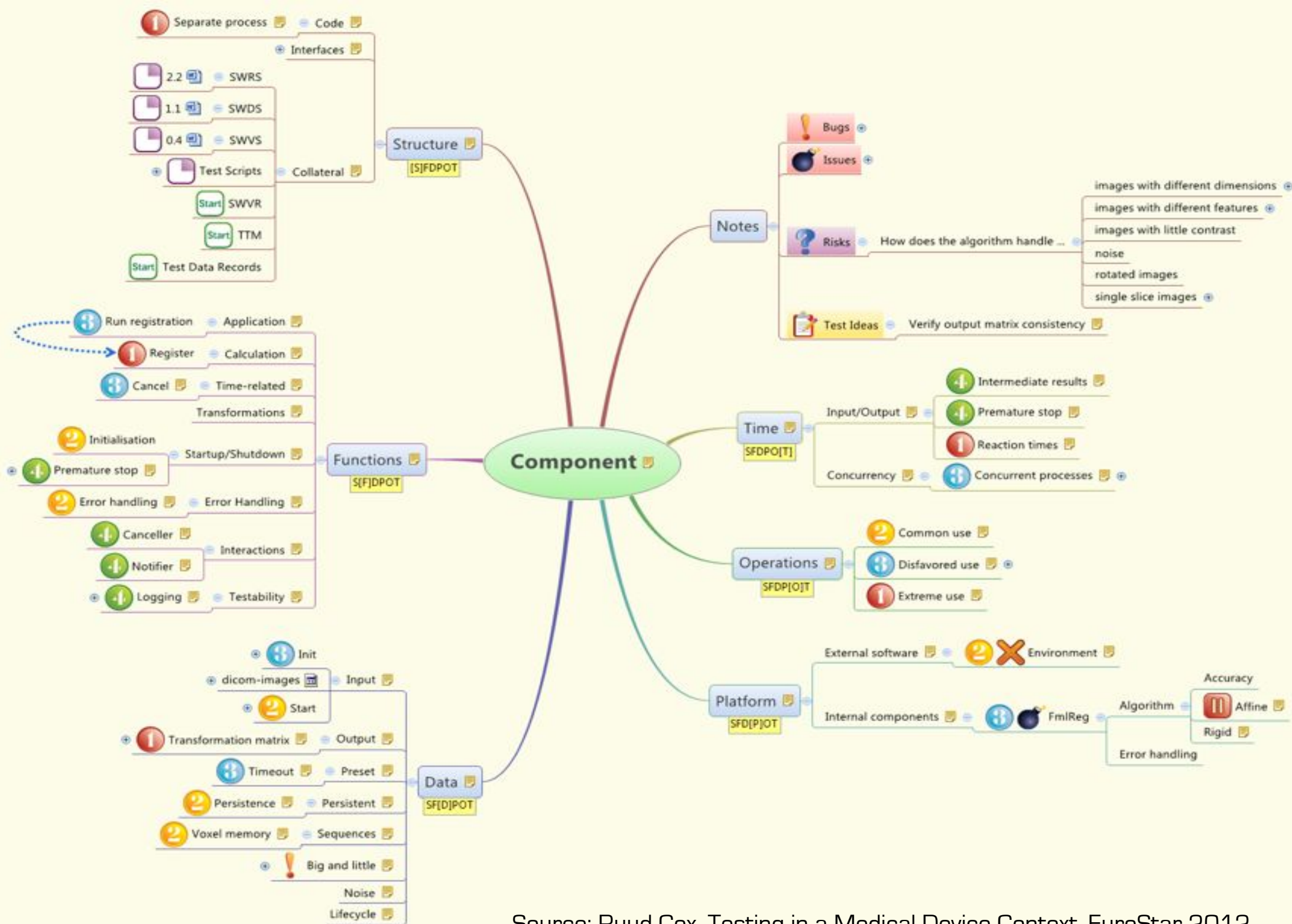
Via Station

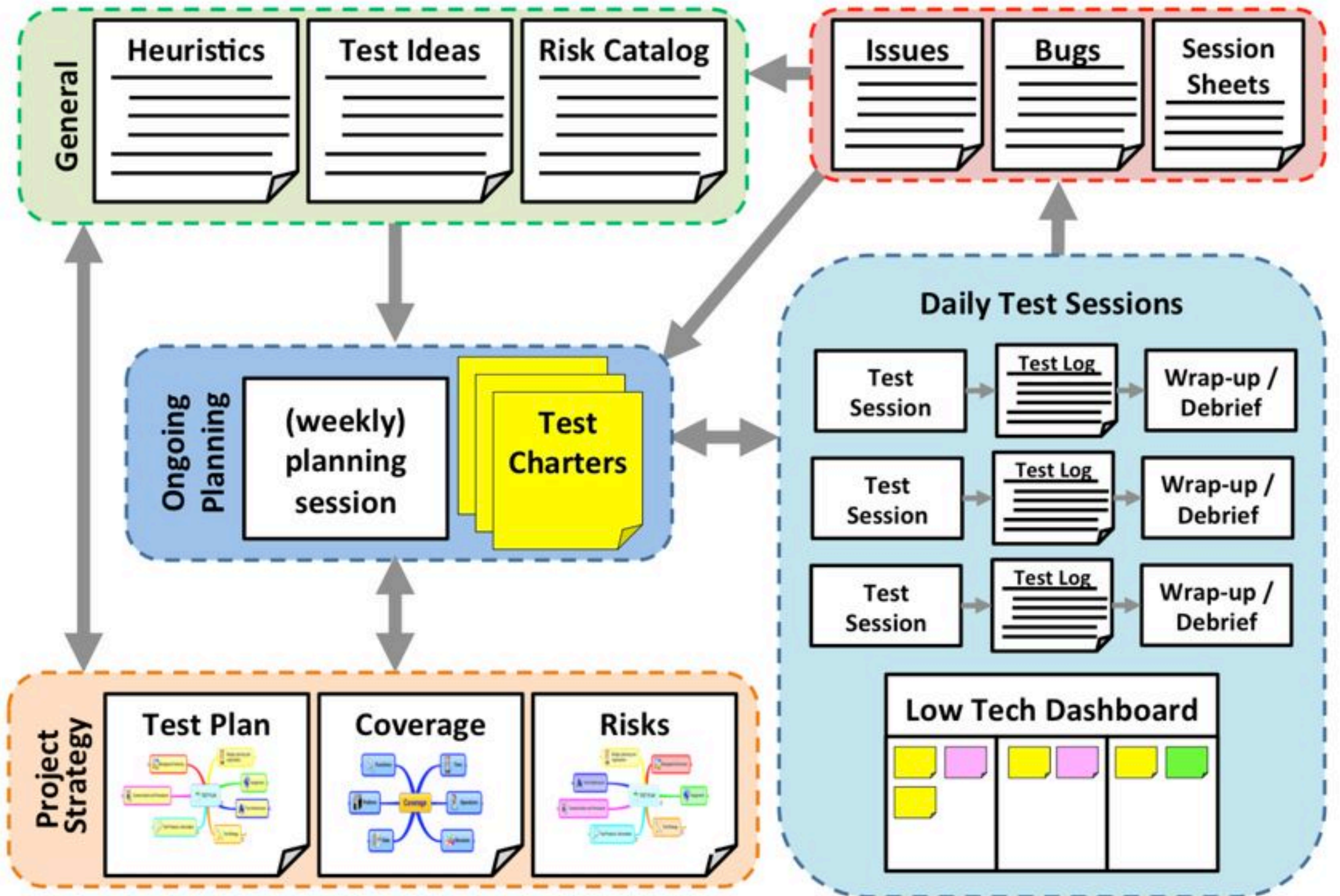
Datum    dd-mm-jjjj

Tijd  :   Vertrek  Aankomst

**Geef reis en prijs** →

Floating Topic





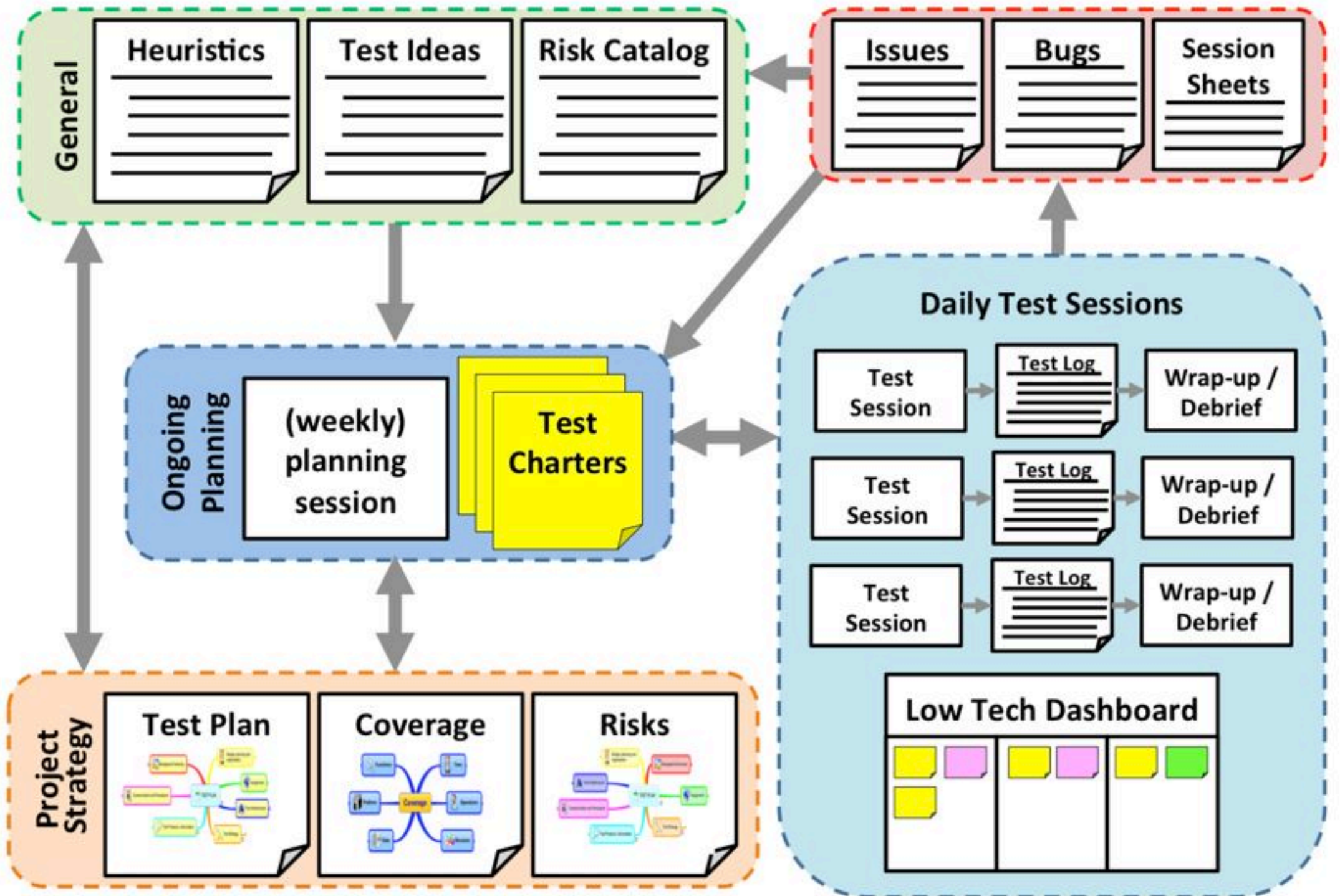
# Test Charters

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**The charter is a one- to three-sentence mission for a testing session**

- Read Chapter 4 of the product specification. Prepare a mind map, and discuss it with Peter (programmer) and David (architect).
- Explore Application X import menu. Identify important features with the goal of developing a coverage outline and a risk list.
- My mission is to test <insert risk here> to <insert coverage here>
- Explore (target) With (resources) To discover (information)

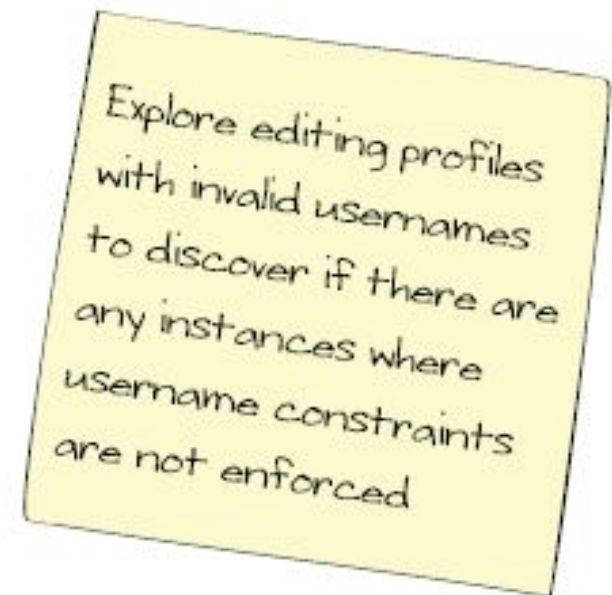




# Sessions

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- The tests are run in sessions with a more or less fixed length
- Every session has a goal and one or several test strategies
- Uninterrupted testing time (no mail, calls, meetings, breaks)
- Duration is normally  $\approx 90$  min
- We do 2-3 sessions per day per tester



Explore editing profiles  
with invalid usernames  
to discover if there are  
any instances where  
username constraints  
are not enforced

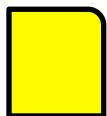
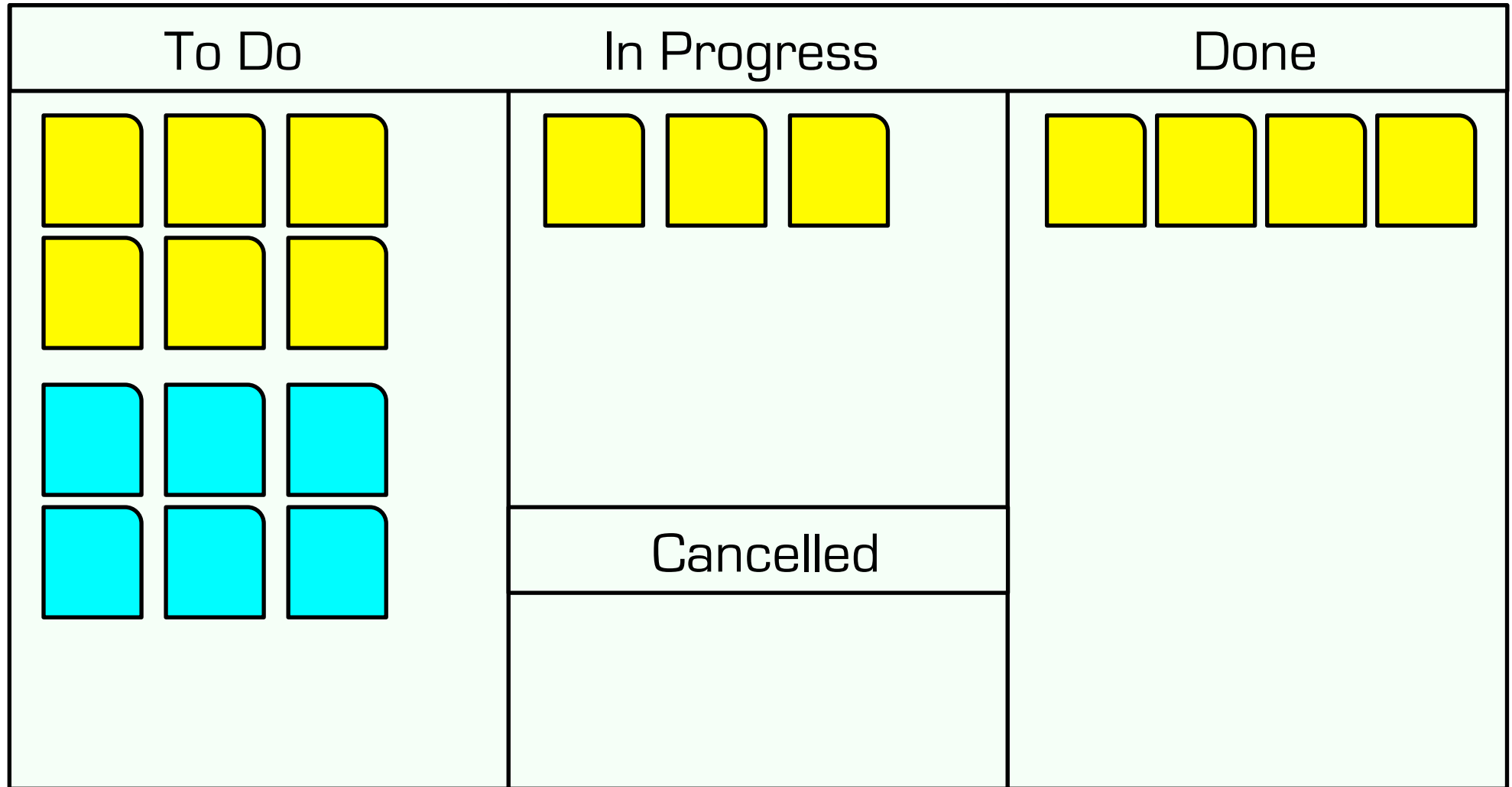
# Types of sessions

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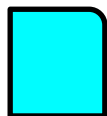
- Survey / discovery
- Deep coverage / targeted
- Broad coverage
- Touring
- ...



# Charters: plan sessions on a dashboard



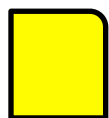
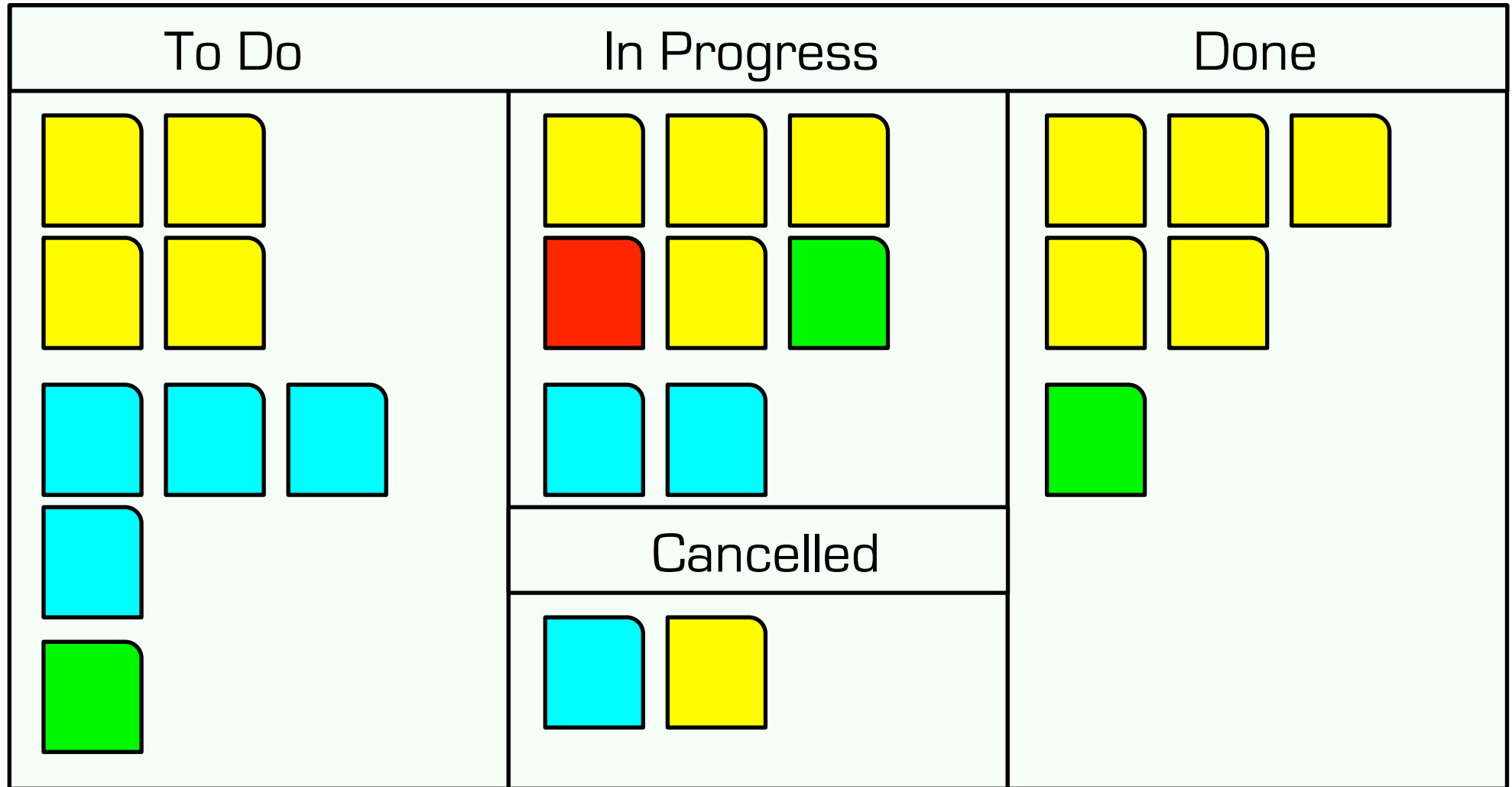
Feature 1



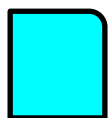
Feature 2



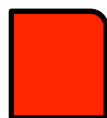
# Dashboards



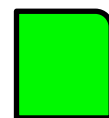
Feature 1



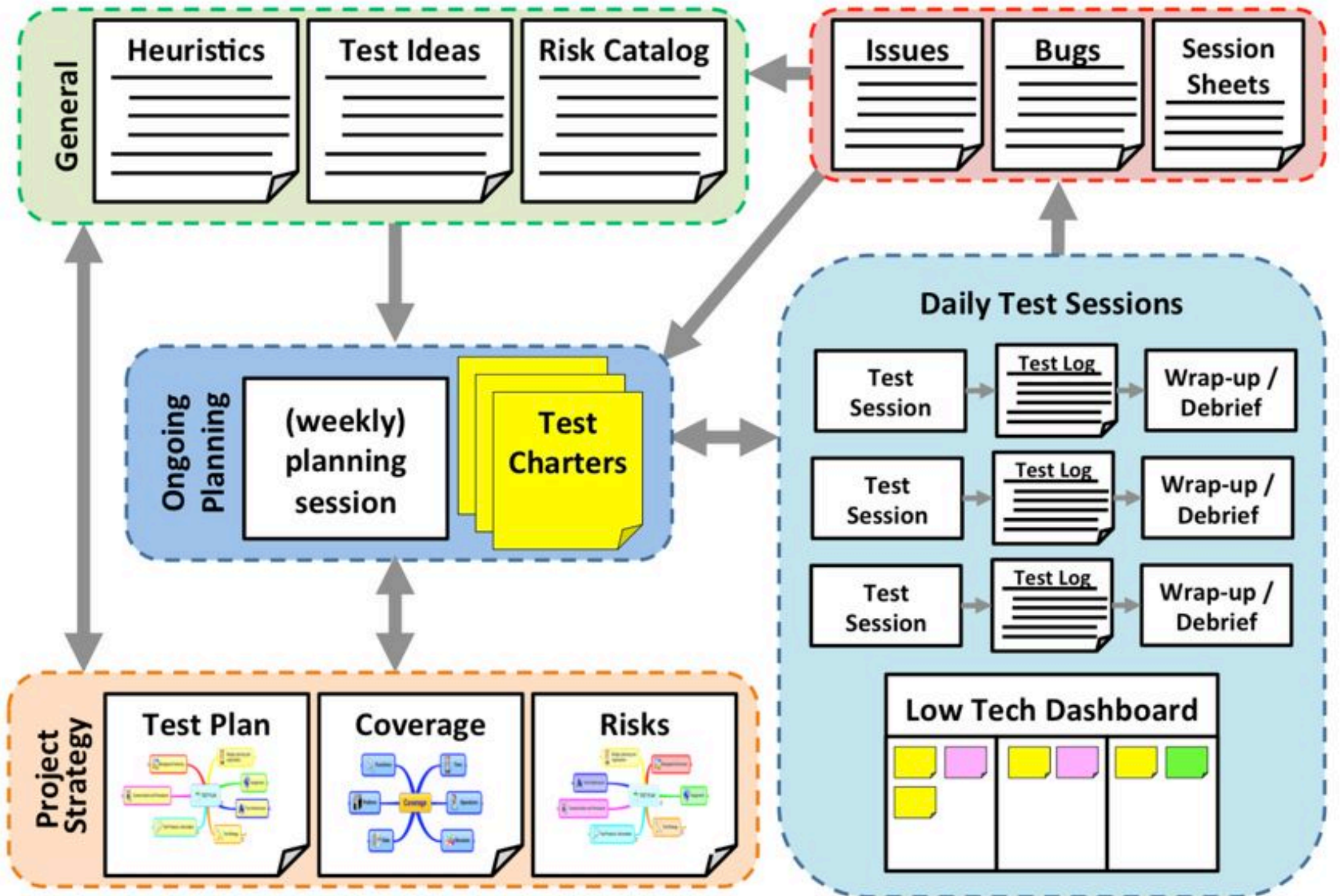
Feature 2



Bug

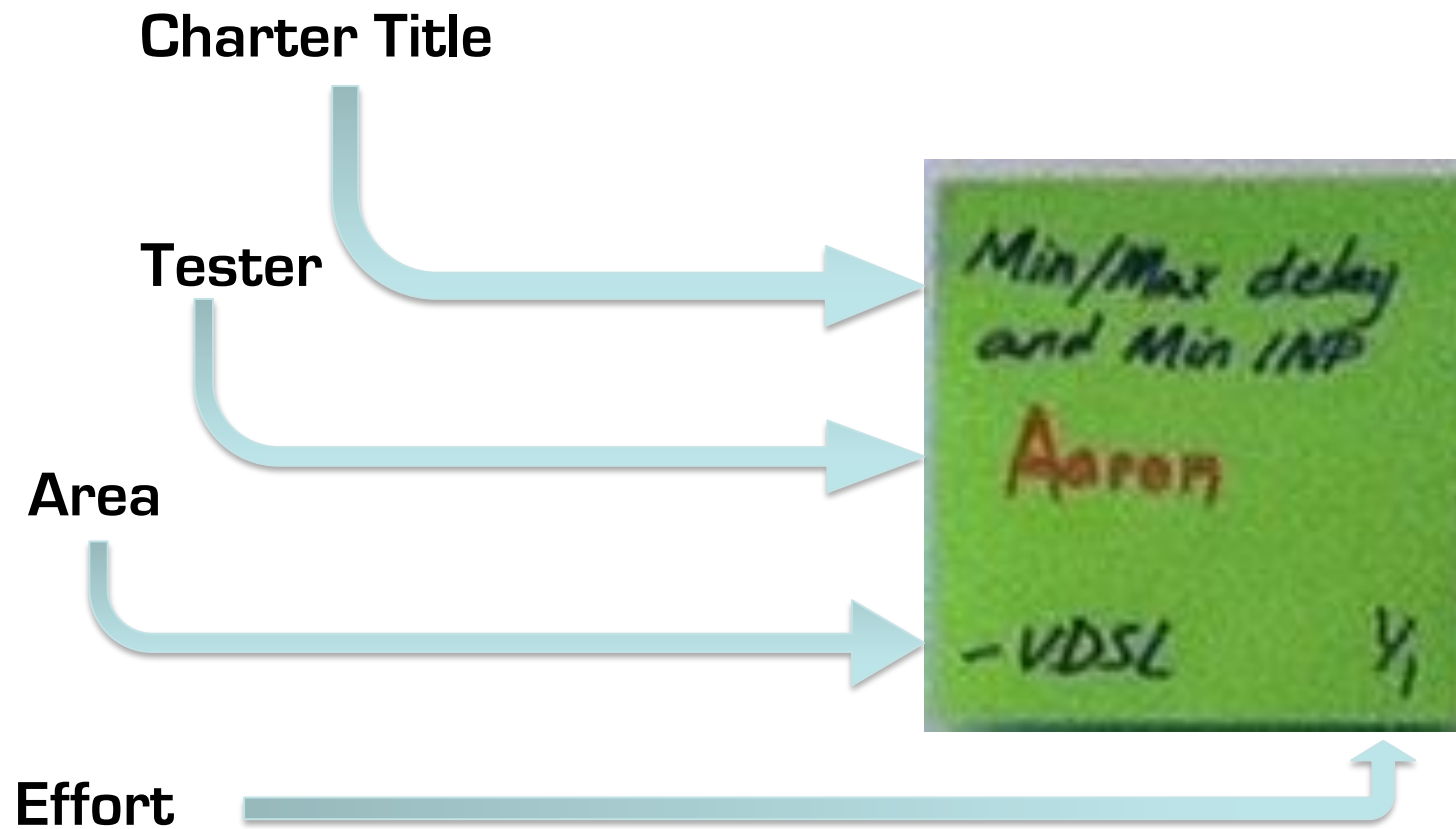


Unplanned work

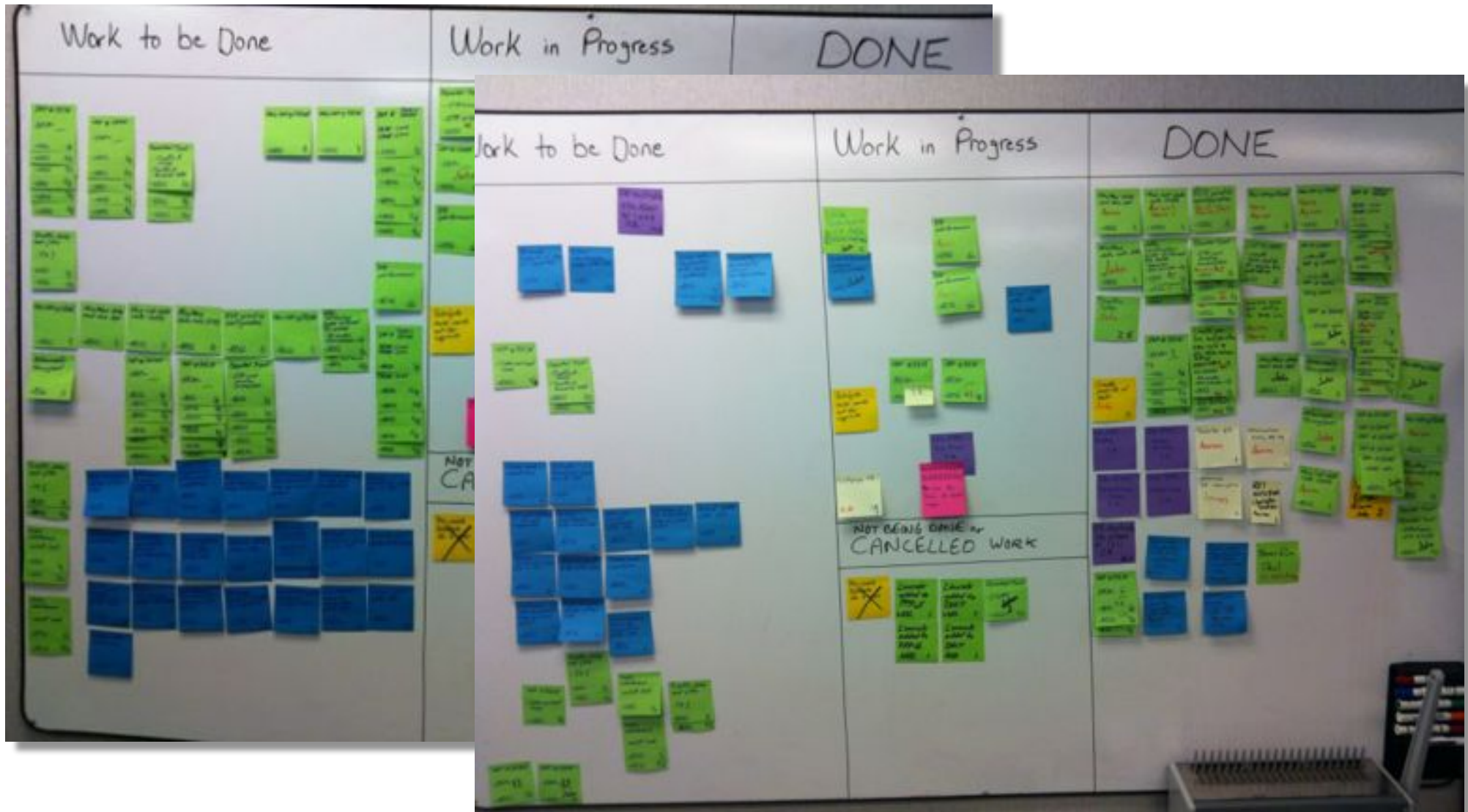


# Dashboards - Stickies

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# Dashboards – The whiteboard



# Note taking

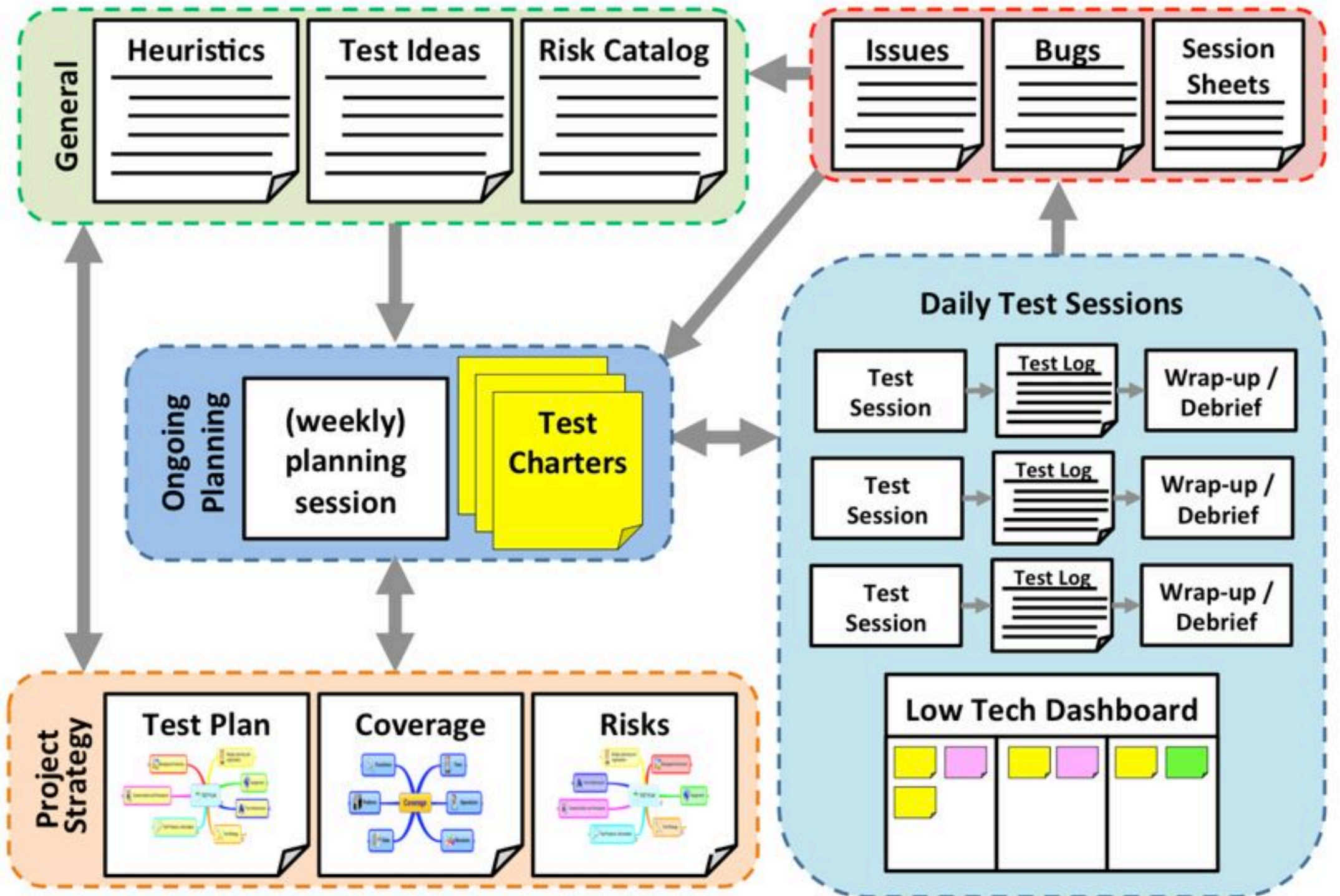
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- Session report <charter name>
- Name of tester
- Time & Date
- Environment
- Mission
- Notes
- Bugs
- Problems/issues
- Questions



Use mind map, pen & paper or tool (i.e. rapid reporter, iTester, session testers, etc)

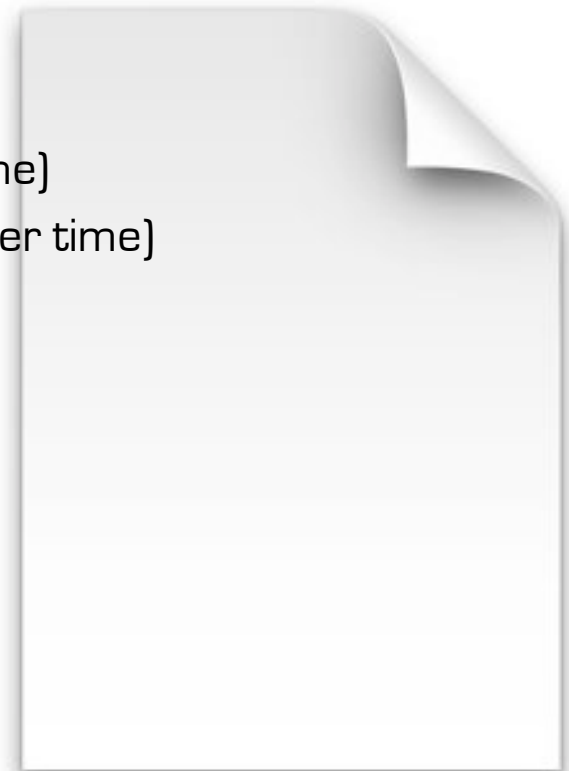
Tip for easy use: print list above or create simple txt-template

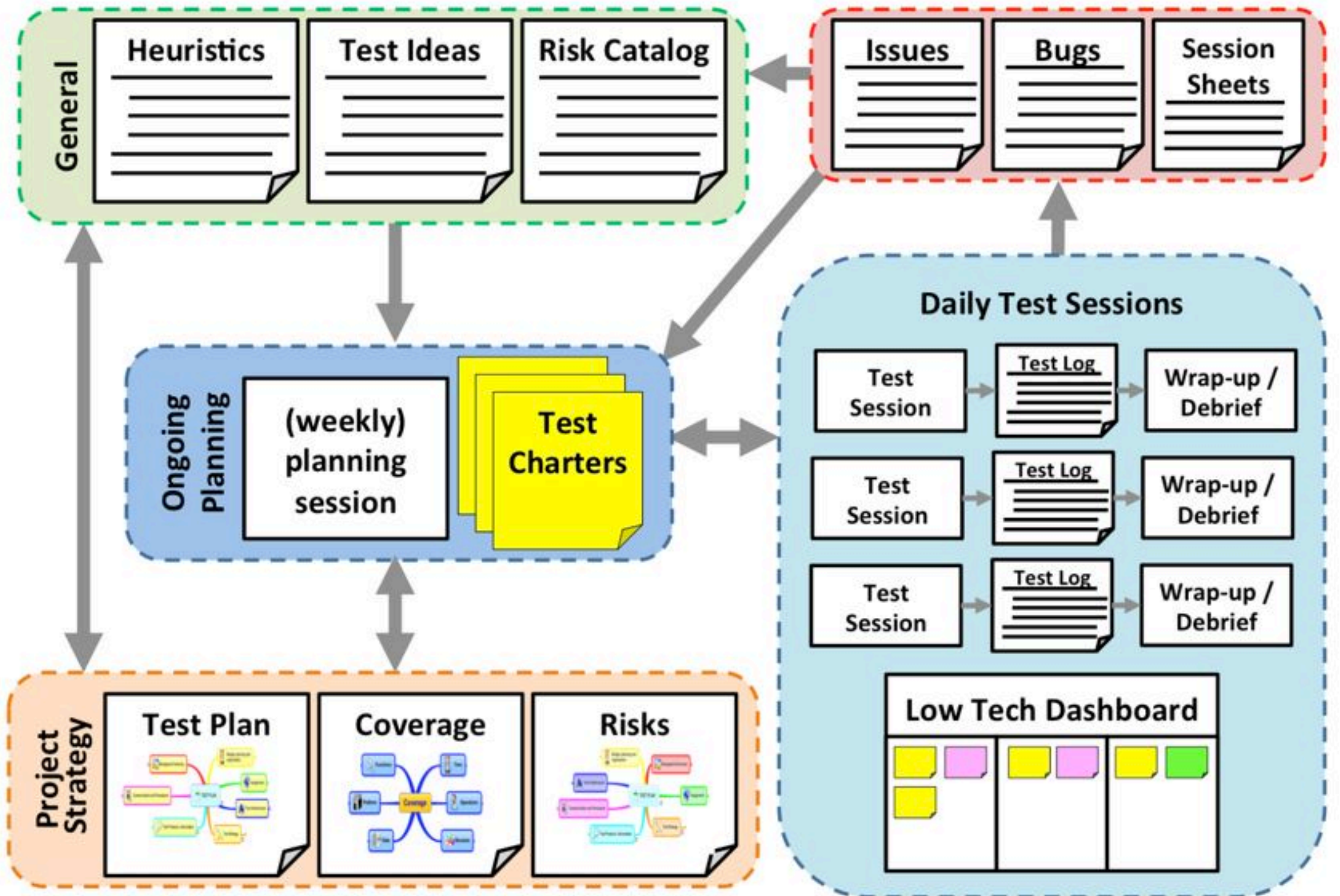


# Session Sheet

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- Charter
- Coverage areas (product areas, product elements, quality criteria or test techniques)
- Start Time + Session duration (long, normal, or short)
- Tester Name(s)
- Charter/opportunity time , expressed as a time breakdown:
  - Test design and execution (as a percentage of the total on-charter time)
  - Bug investigation and reporting (as a percentage of the total on-charter time)
  - Session setup (as a percentage of the total on-charter time)
- Data Files
- Test Log (notes the tester made during testing)
- Bugs (a problem that threatens the value of the product)
- Issues (a problem that threatens the value of the testing process)







# Debrief - PROOF

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**Past:** What happened during the session?

**Results:** What was achieved during the session?

**Outlook:** What still needs to be done?

**Obstacles:** What got in the way of good testing?

**Feelings:** How does the tester feel about all this?



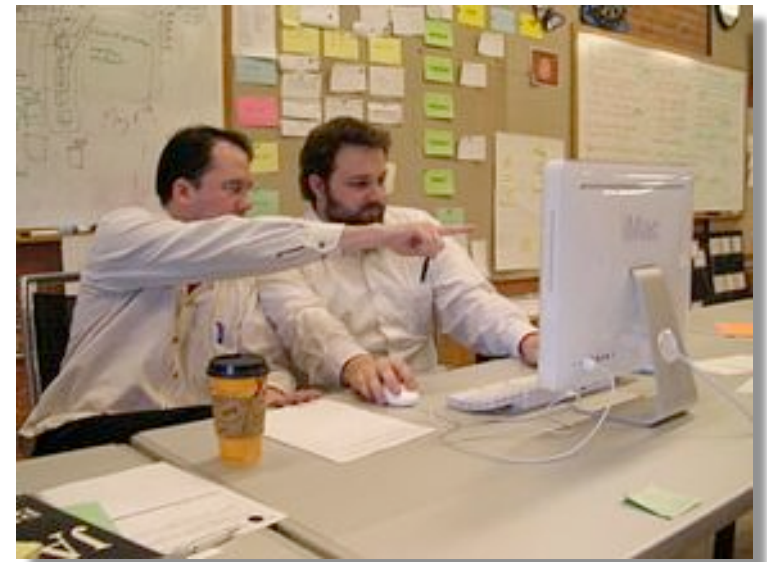
Discuss session sheet to assure that both understand it.

Discuss session and ask questions: new sessions may be chartered.

# Pairing

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- Focus & defocus
- Learning
- More creative and faster idea development
- Review on the go
- Sociable and more fun



## Why ET is powerful ...

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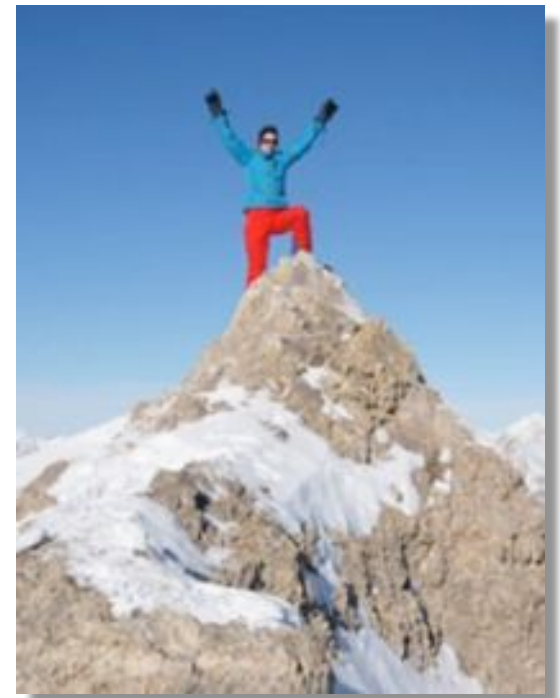
- Do what really needs to be done
- Create engagement: help people use their brains
- Take advantage of tacit knowledge and skill
- Use insights from experiments to inform the next
- Beware of the creative power of exploration



# Challenges?

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- Exploratory Testing = not easy and needs (a lot) training and practice
- Often seen as most difficult:
  - Note taking
  - Test ideas
  - Coverage reporting
  - Managing ET



# What can go wrong...

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- Missing things
- Own interpretation
- Biased interpretation
- People think you are fooling around
- Misconceptions
- Undocumented ET
- Thoughtless ET
- Undirected ET
- Misdirected ET
- Bad testing story
- Insufficient information
- Poor self awareness/management
- Poor focussing



# How to master exploratory testing?

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- Just do it!
- Practice, practice and practice some more...
- Pair with colleagues
- Testing Dojo
- Debrief & retrospect
- Train creating test ideas fast
- Learn more about observation, experiments, biases, social science, ....



## Some quotes

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- If you cannot trust your testers, you do not make them write more detailed test cases. But you train them!

**(Rikard Edgren – EuroStar 2012 & Gitte Ottosen – ATD 2012)**

- “A tester knows that things can be different”

**(Jerry Weinberg)**

- “Testing is about questioning & learning under conditions of fundamental uncertainty.”

**(RST)**

Testing is like playing music...

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**Let's Test!!!**



## Exercise: Test Charters

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**Team up in groups of 3 or 4 and create test charters, prioritize them and estimate them for sessions of max. 20 minutes.**

**Fill the dashboard**



## Exercise: Survey Session

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**Work in pairs: do a survey session for 20 minutes**

**Discuss roles first:**

- **Who does what?**
- **Who takes notes?**
- **Change roles halfway**
- **Approach?**
- **Heuristics?**

**Debrief after the session in 5 minutes**



## Exercise: Deep Coverage Session

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**Work in pairs: do a deep coverage session for 20 minutes**

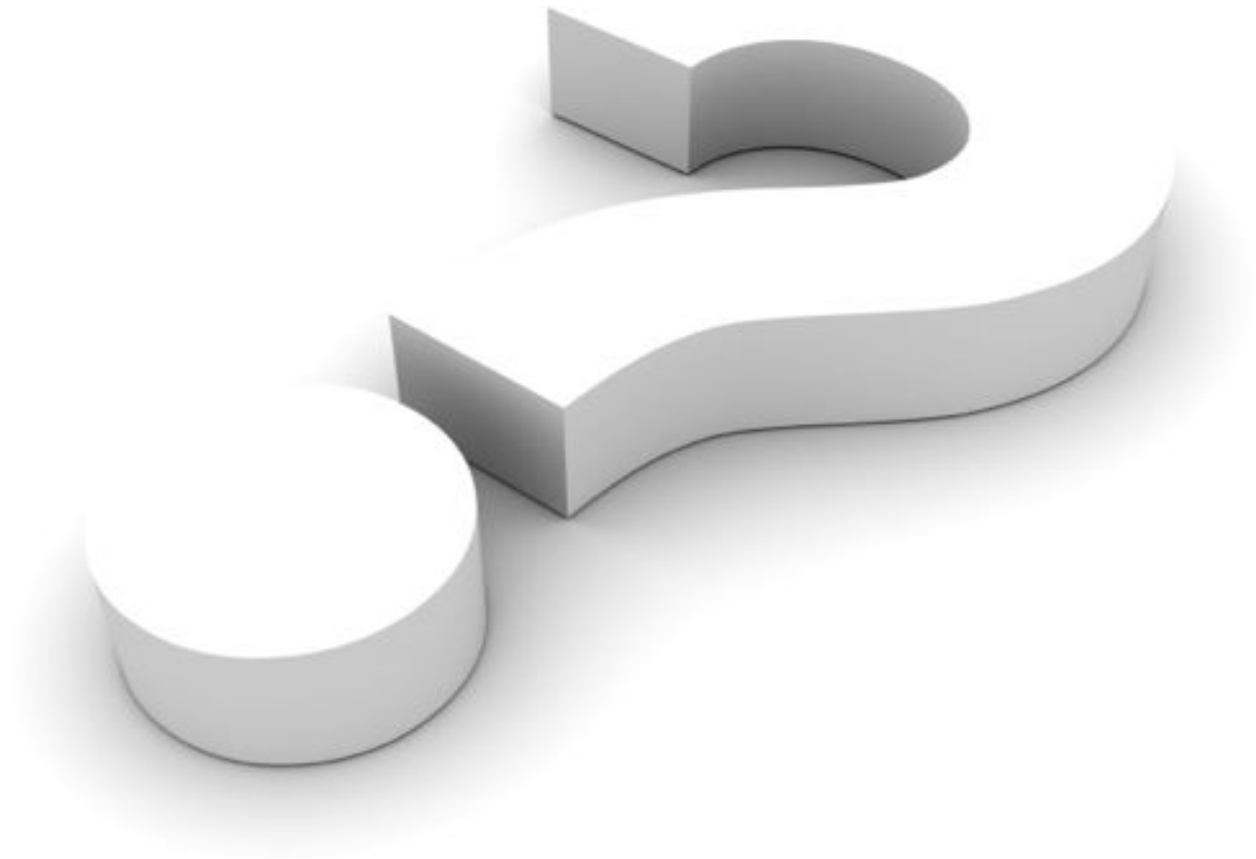
**Discuss roles first:**

- **Who does what?**
- **Who takes notes?**
- **Change roles halfway**
- **Approach?**
- **Heuristics?**

**Debrief after the session in 5 minutes**

# Questions?

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# Contacts

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