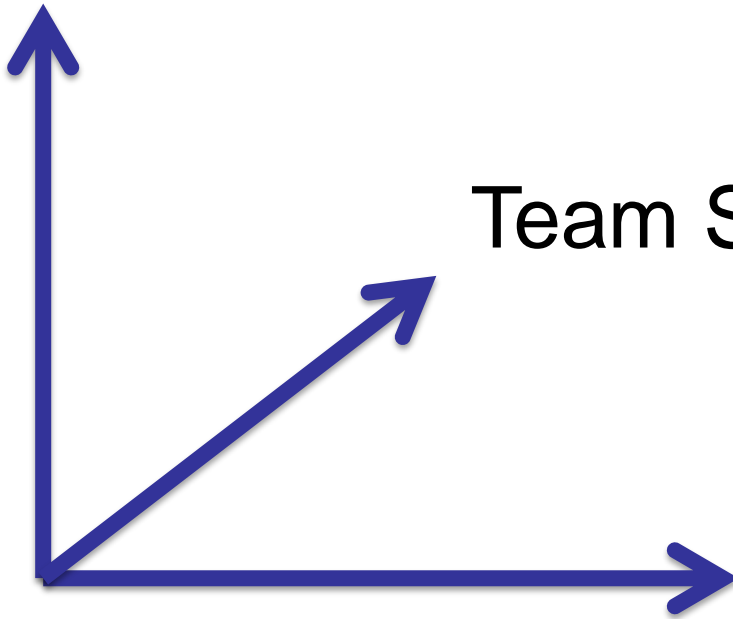




**Projekte - nur durch gutes Testen  
skalierbar**

# Dimensions of Scaling

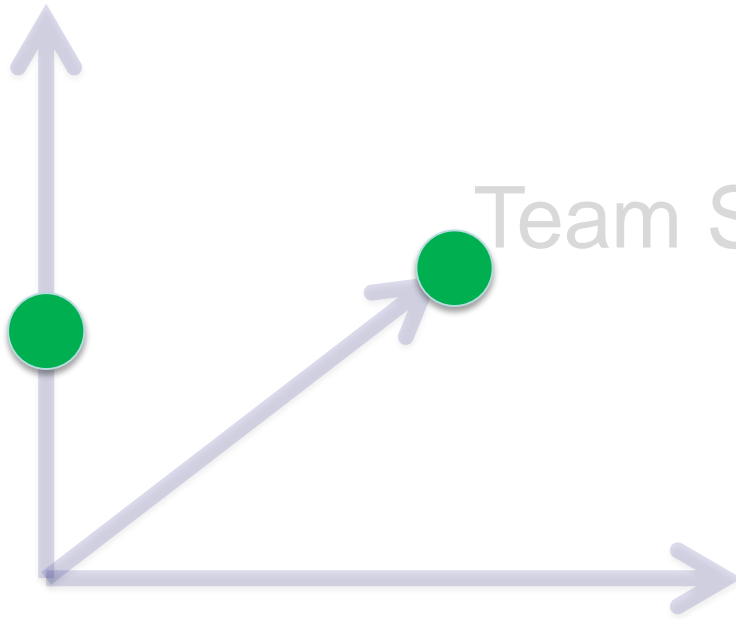
Amount of  
Features



Team Size

Product  
Complexity

Amount of  
Features



Team Size

Product  
Complexity

# Test Properties

	Features	Complexity	Head Count
Fast Execution	+++		+++
Maintainability	+		+
Low Setup Costs	+		++
High Automation	+	+++	
High Integration Level		+++	

# Scrum Activities

## Development

- Test first
- DoD includes testing

## Planning

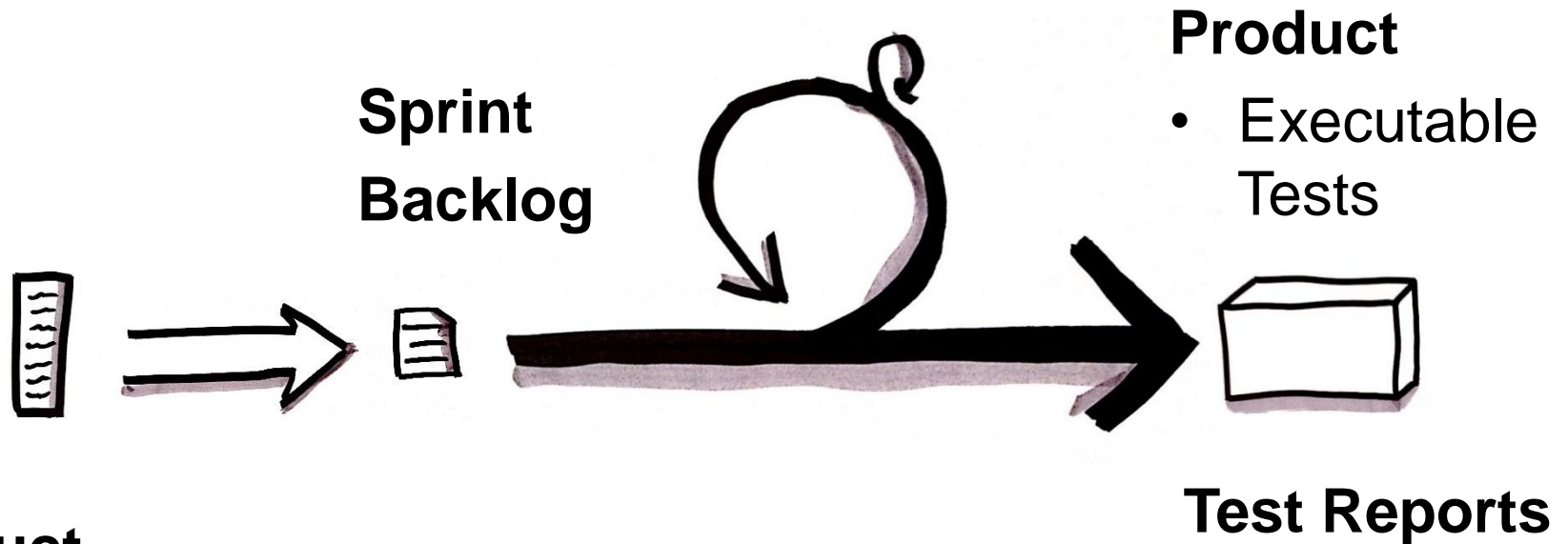
- How to test?
- Test effort?



## Demo

- Test cases
- Test tools

# Scrum Artifacts

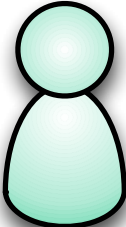


**Product Backlog**

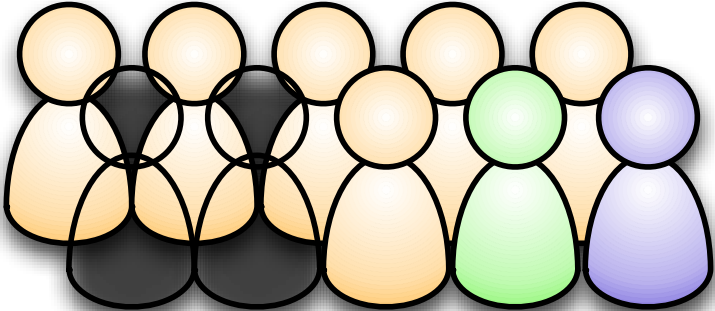
Acceptance Criteria include testing

# Scrum Roles

Product  
Owner



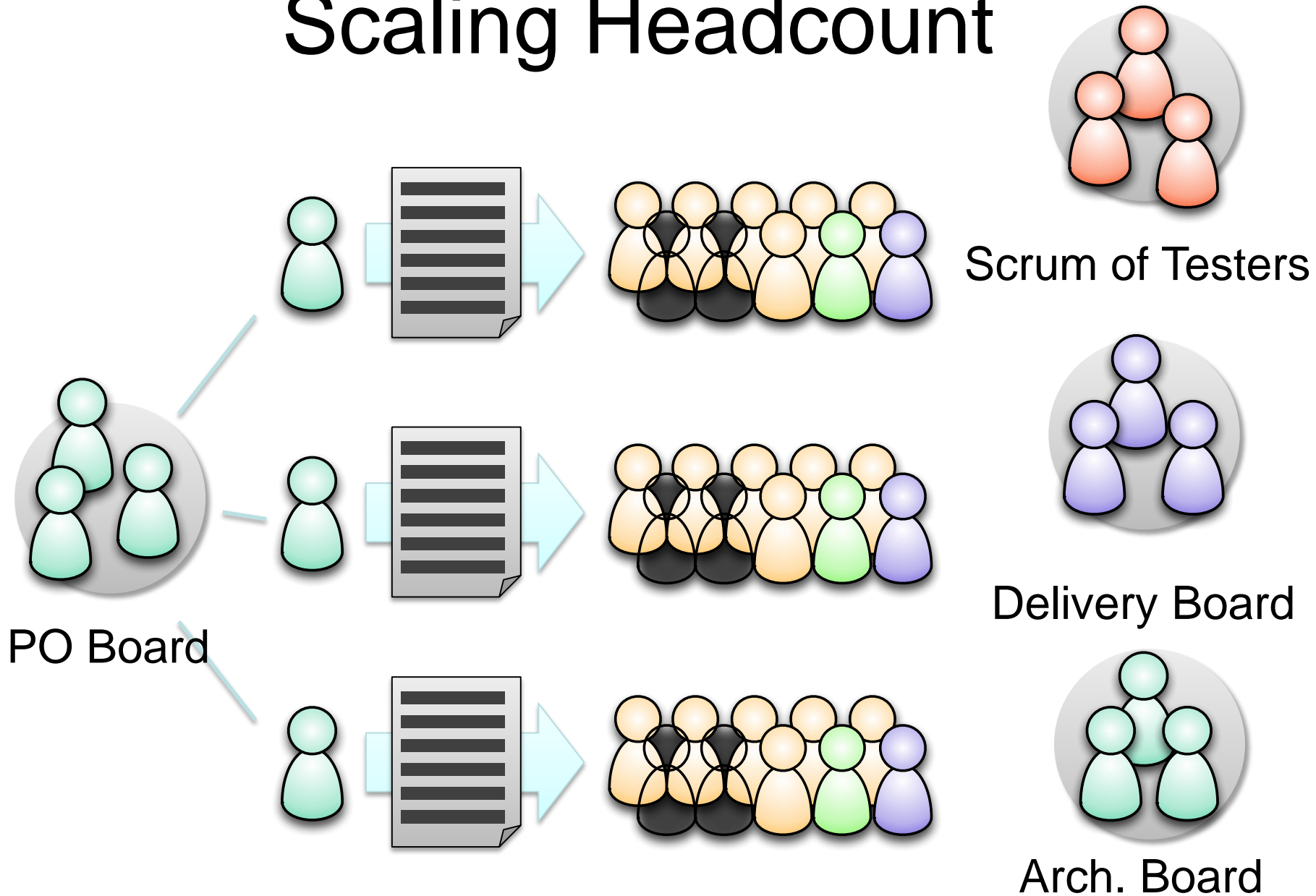
Developers



Testers  
(Roles!)

Scrum  
Master

# Scaling Headcount





# Test Implementations

xUnit

Component Tests

Automated System Tests

Automated GUI Tests

Manual Tests

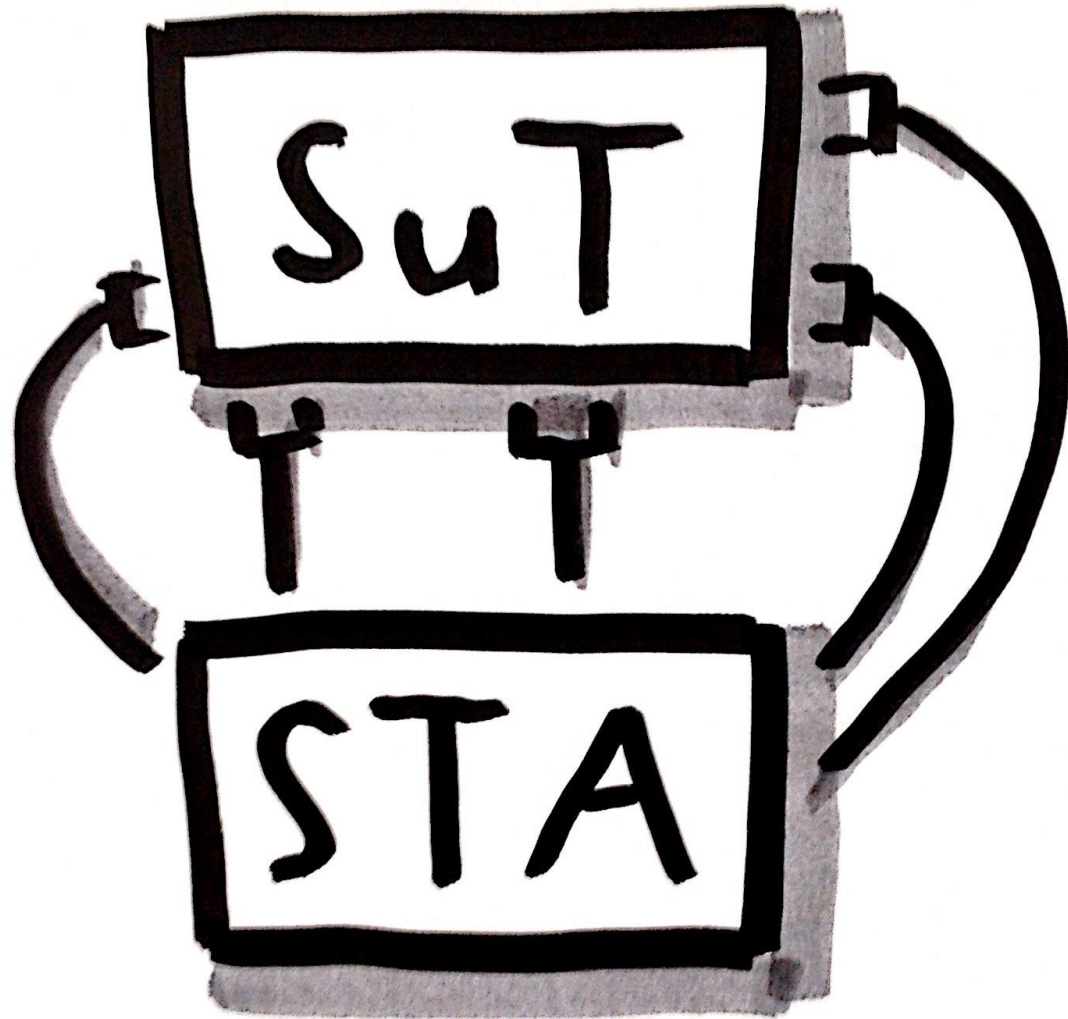
# xUnit

```
@Test
public void testIncrement2() {
    CounterImpl c1 = CounterImpl.getInstance(31, 5);
    CounterImpl c2 = CounterImpl.getInstance(7, 3);

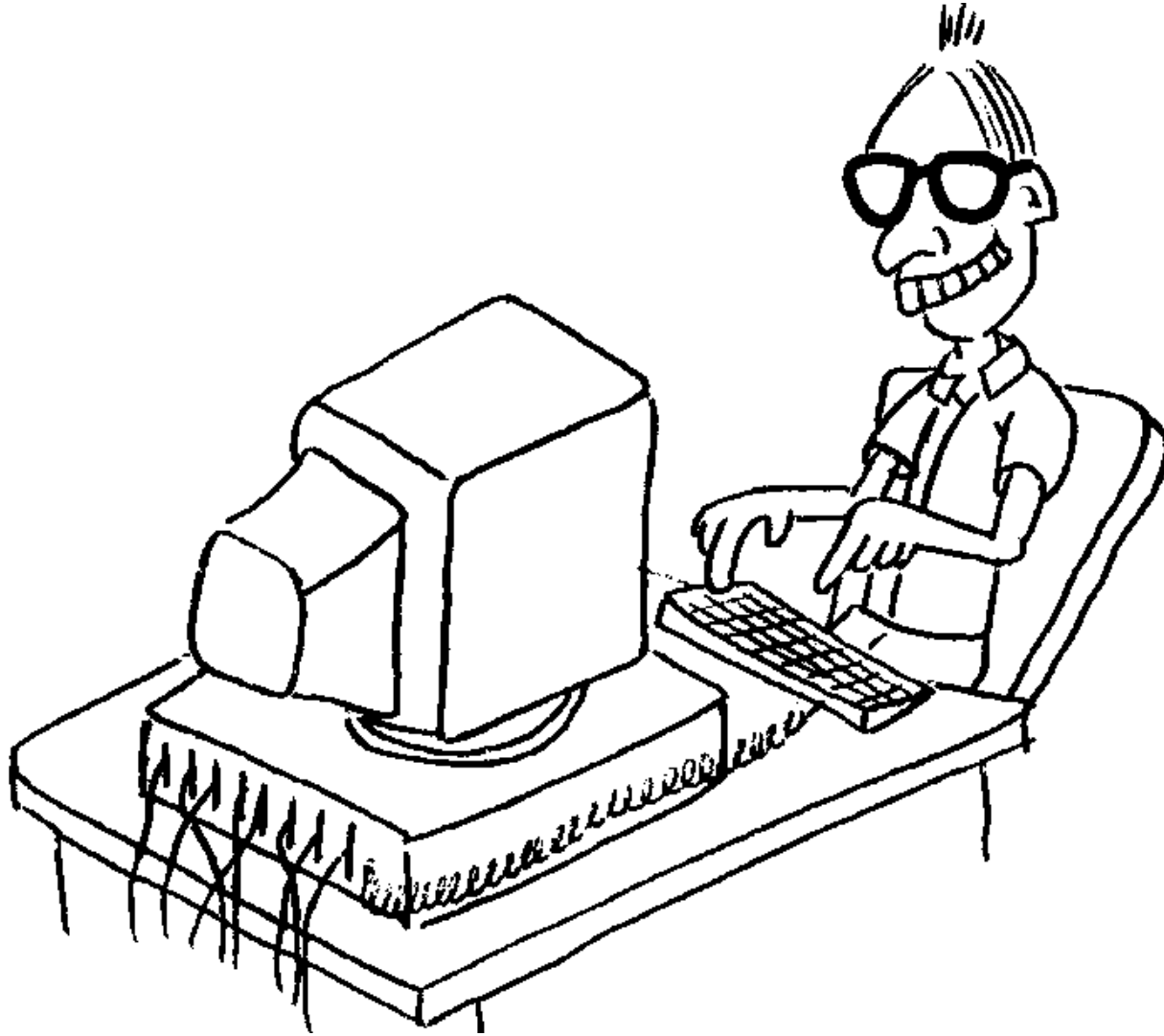
    final CounterImpl sum = c1.increment(c2);

    assertEquals(38, sum.getMissedCount());
    assertEquals(8, sum.getCoveredCount());
}
```

					KOR_AdIC GESCHWINDIGKEITSEMPFEHLUNG					EXP_Berechnungsstatus	
					KOR_Direk false					EXP_VOptAsserter	
					KOR_Aufg true					EXP_VDurchfahrtAsserter	
dtf	fab	dfe	duno	typ	Sperrbere	Optimie	Prognoseze	Sperrbereich	IstZeit	Korridor	vOpt
1	100	1	100	SIG_AB			03:00		x		null
1	100	2	200	SIG_AN			03:30		x		null
1	200	3	200	SIG_AB			04:30		x		null
1	200	4	66	BP_AN			04:45		x		null
2	200	5	66	BP_AB			04:45		x		null
2	200	6	1	SIG_AN			05:00		x		null
2	1	7	1	SIG_AB			05:00		x		null
2	1	8	2	SIG_AN			06:00		x		null
2	2	9	2	SIG_AB			06:00		x		null
2	2	10	3	SIG_AN			07:00		x		null
2	3	11	3	SIG_AB			07:00		x		null
2	3	12	4	SIG_AN			08:00		x		null
2	4	13	4	SIG_AB			08:00		x		null
2	4	14	5	SIG_AN			09:00		x		null
2	5	15	5	SIG_AB	01:00	01:00	09:00	60:00	x	x	110
2	5	16	6	MAG_AN	=	=	+60	=		x	110
2	6	17	6	MAG_AB	=	=	=	=		x	110
2	6	18	7	SIG_AN	=	=	+60	=		x	110
2	7	19	7	SIG_AB	=	=	=	=		x	110
2	7	20	8	MAG_AN	=	=	+60	=		x	110
2	8	21	8	MAG_AB	=	=	=	=		x	110
2	8	22	1	BP_AN	=	=	+60	=		x	110
3	8	23	1	BP_AB	=	=	=	=		x	110
3	8	24	9	SIG_AN	=	=	+60	=		x	110
3	9	25	9	SIG_AB	=	=	=	=		x	110
3	9	26	10	MAG_AN	=	=	+60	=		x	110
3	10	27	10	MAG_AB	=	=	=	=		x	110



# Automated GUI & Manual Tests





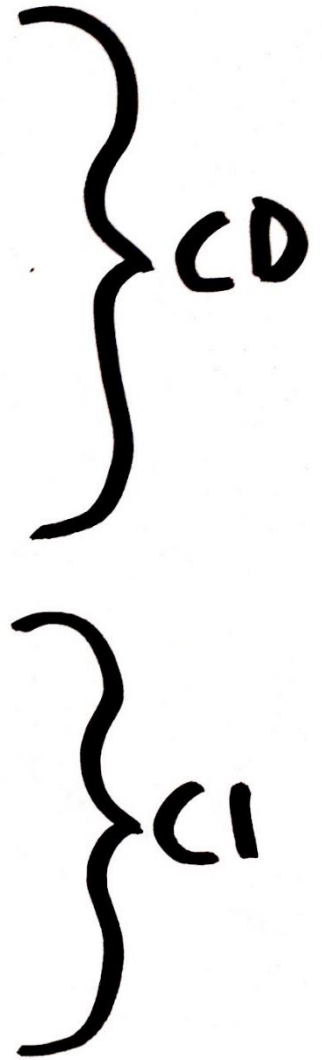
MT

GUI

STA

CT

UT



# Test Properties

	Fast Execution	Maintainability	Low Setup Costs	High Automation	High Integration Level
Unit Tests	+++	+++	+++	+++	
CT	+++	+++	+++	+++	+
STA		+		+++	+++
GUIA				+++	+++
MT					+++

# Test Properties

	Features	Complexity	Head Count
Unit Tests	+++		+++
CT	+++		+++
STA		+++	
GUIA		+++	
MT			



# SCALABLE TESTING CHECK LIST

Organization & Process	Tooling	Test Implementations
<input type="checkbox"/> Testers Part of Teams	<input type="checkbox"/> Continuous Integration	<input type="checkbox"/> Unit Tests
<input type="checkbox"/> Test First	<input type="checkbox"/> Continuous Deployment	<input type="checkbox"/> Component Tests
<input type="checkbox"/> Testing Part of DoD	<input type="checkbox"/> Test Metrics	<input type="checkbox"/> System Tests
<input type="checkbox"/> Scrum of Scrums		<input type="checkbox"/> Automated GUI Tests

## MAKING VISIONS WORK.

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