

[dstl]

08 September 2016

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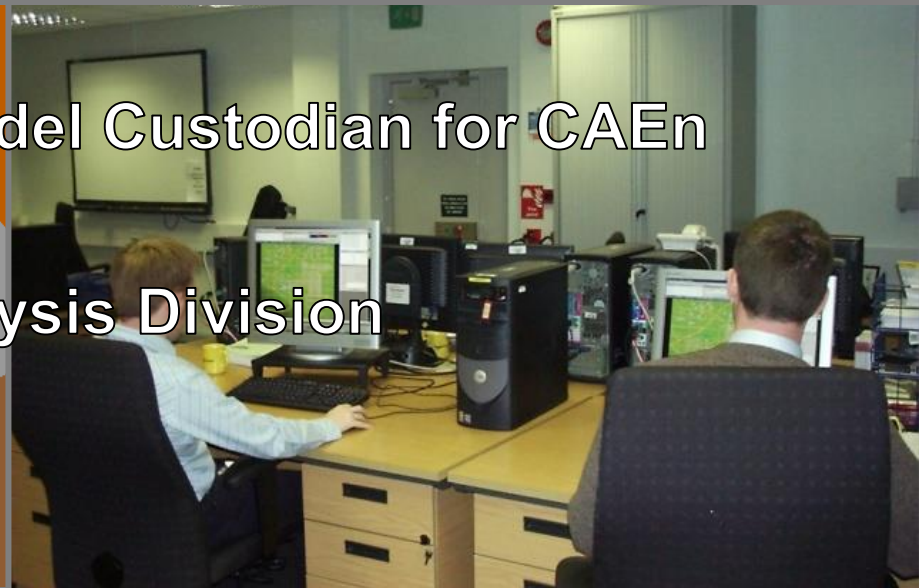


Ministry
of Defence

The CAEn Process – Wargaming, Simulation and Replication



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Introduction

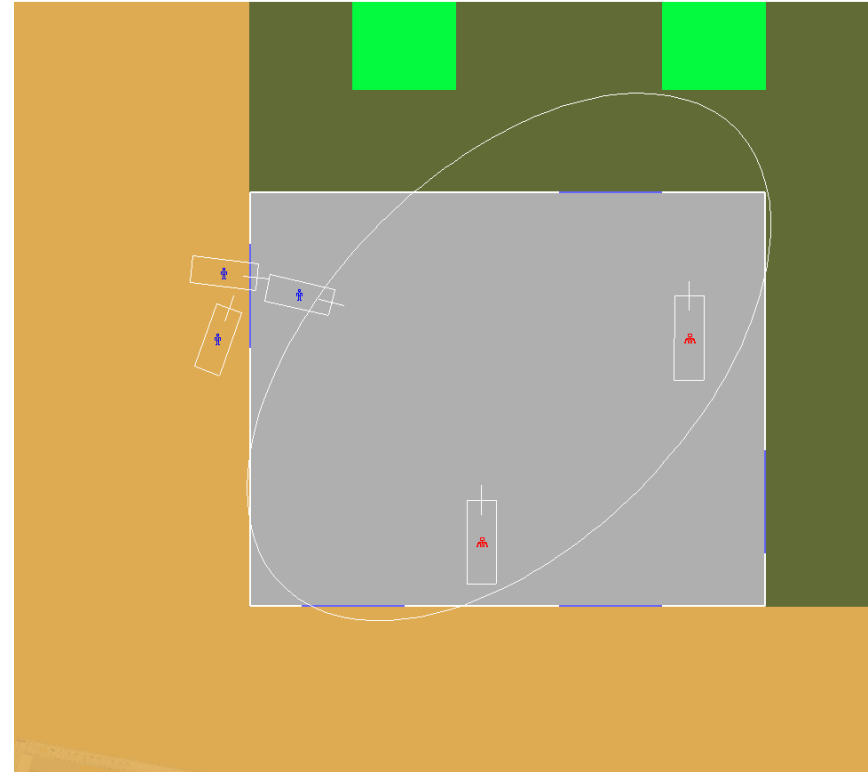
Purpose:

- to inform you on the risks and benefits of using a system like CAEn to answer customer questions
- to explain the approach used by Dstl to minimise those risks whilst still delivering an analytically robust product



What is CAEn?

- CAEn - Close Action Environment
- Interactive, multi-sided, stochastic wargame and simulation
- Force sizes up to Coy Grp
- Highly detailed terrains up to 5 km²
- Specialising in urban combat



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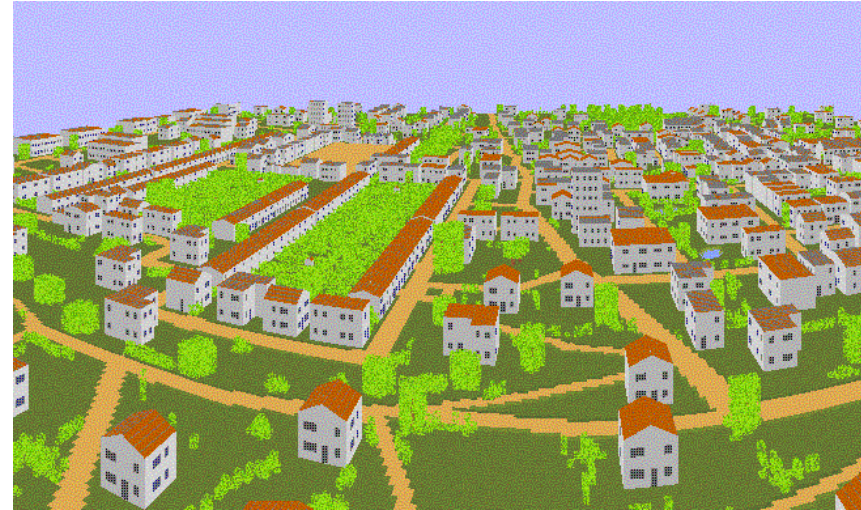
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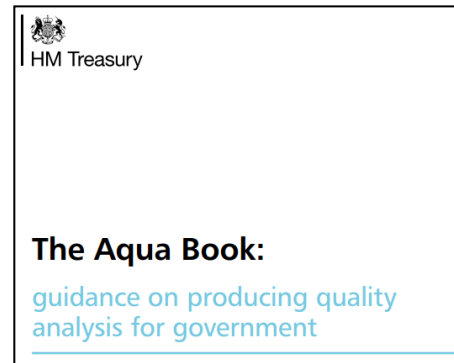
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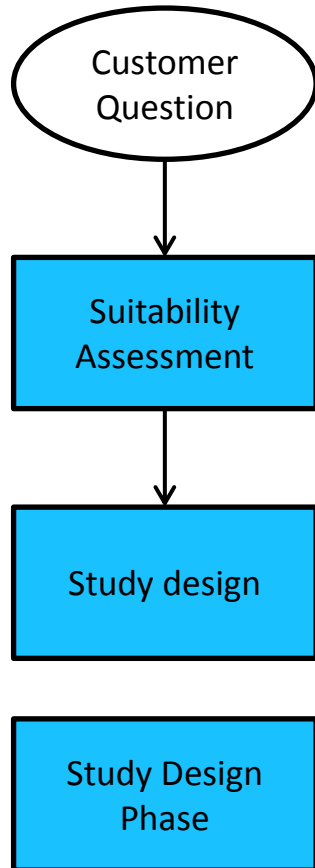
What is the CAEn Process?

- Actions taken in order to answer a customer question
- Auditable process
 - We can look back and understand why we did what we did
- Helps ensure adherence to the principles of RIGOUR
 - Repeatable
 - Independent
 - Grounded in reality
 - Objective
 - Uncertainty managed
 - Robust

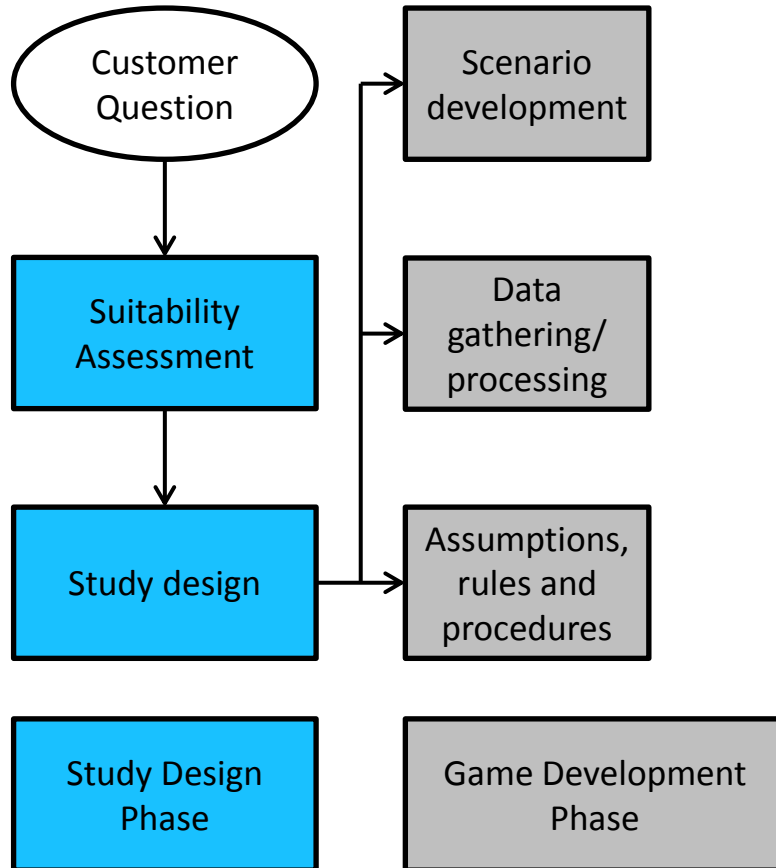


[Macpherson Report](#)
[Aqua Book](#)

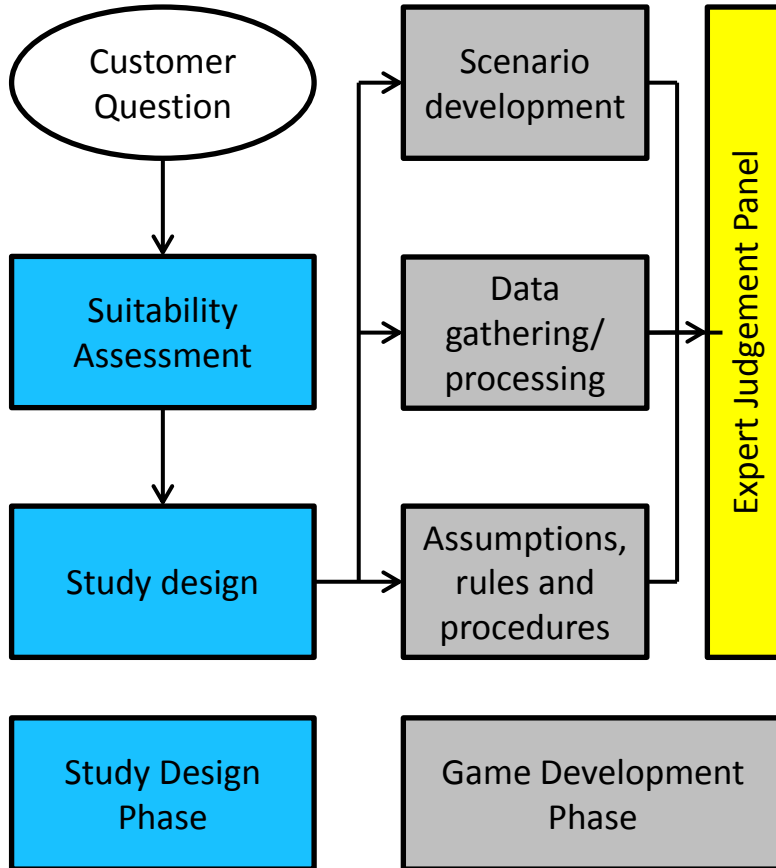
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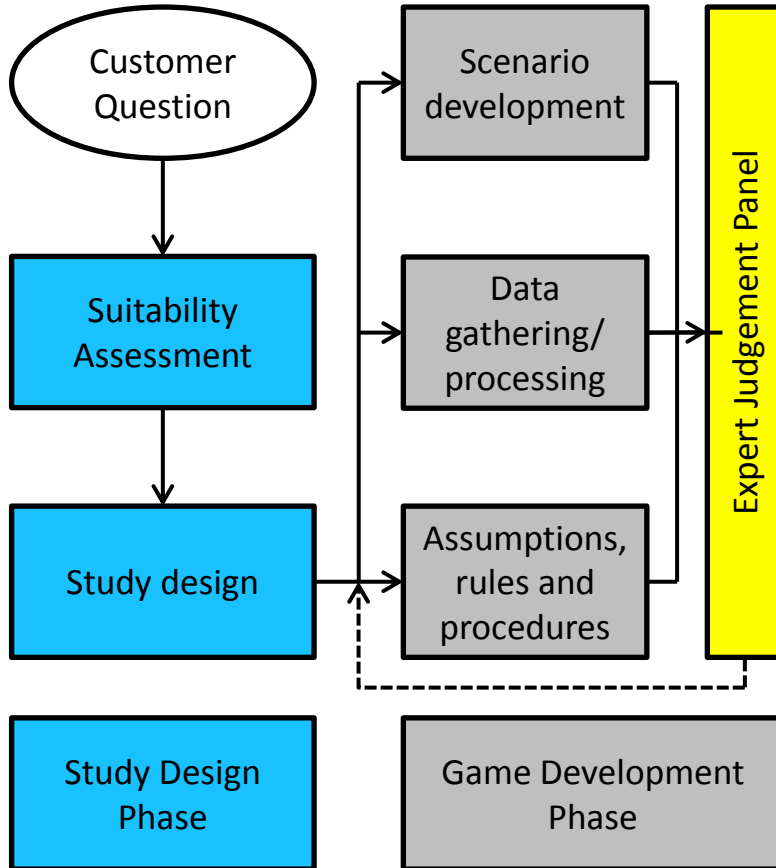
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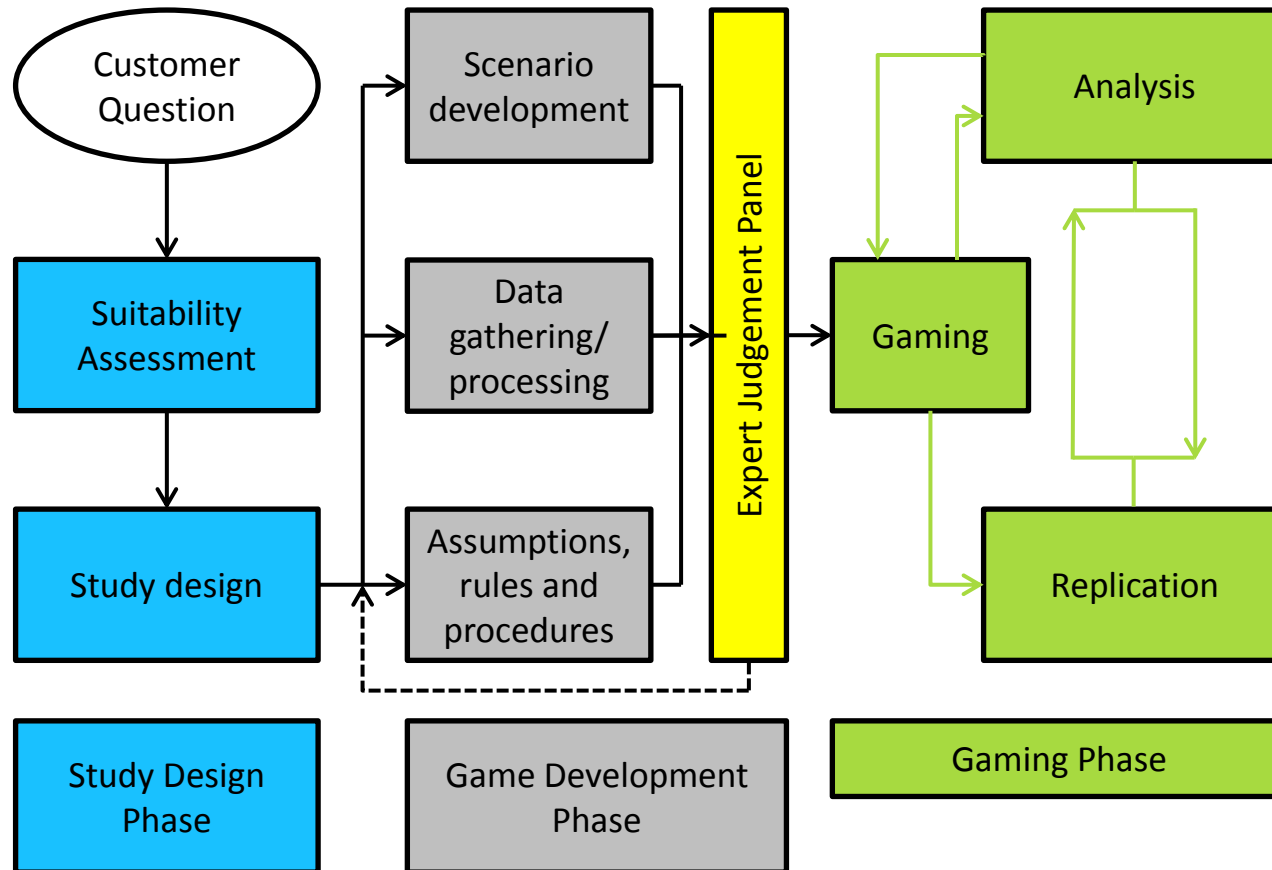
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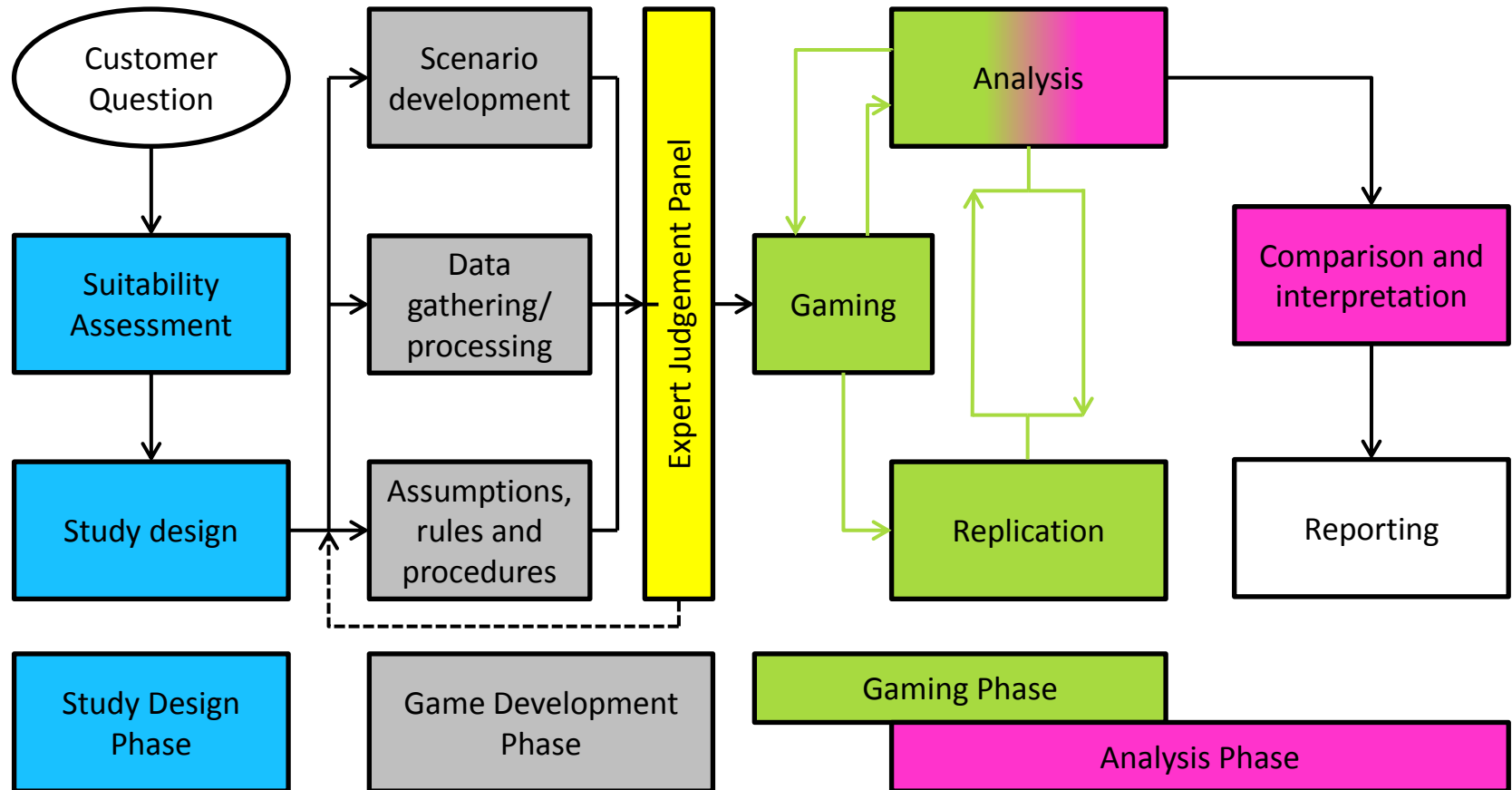
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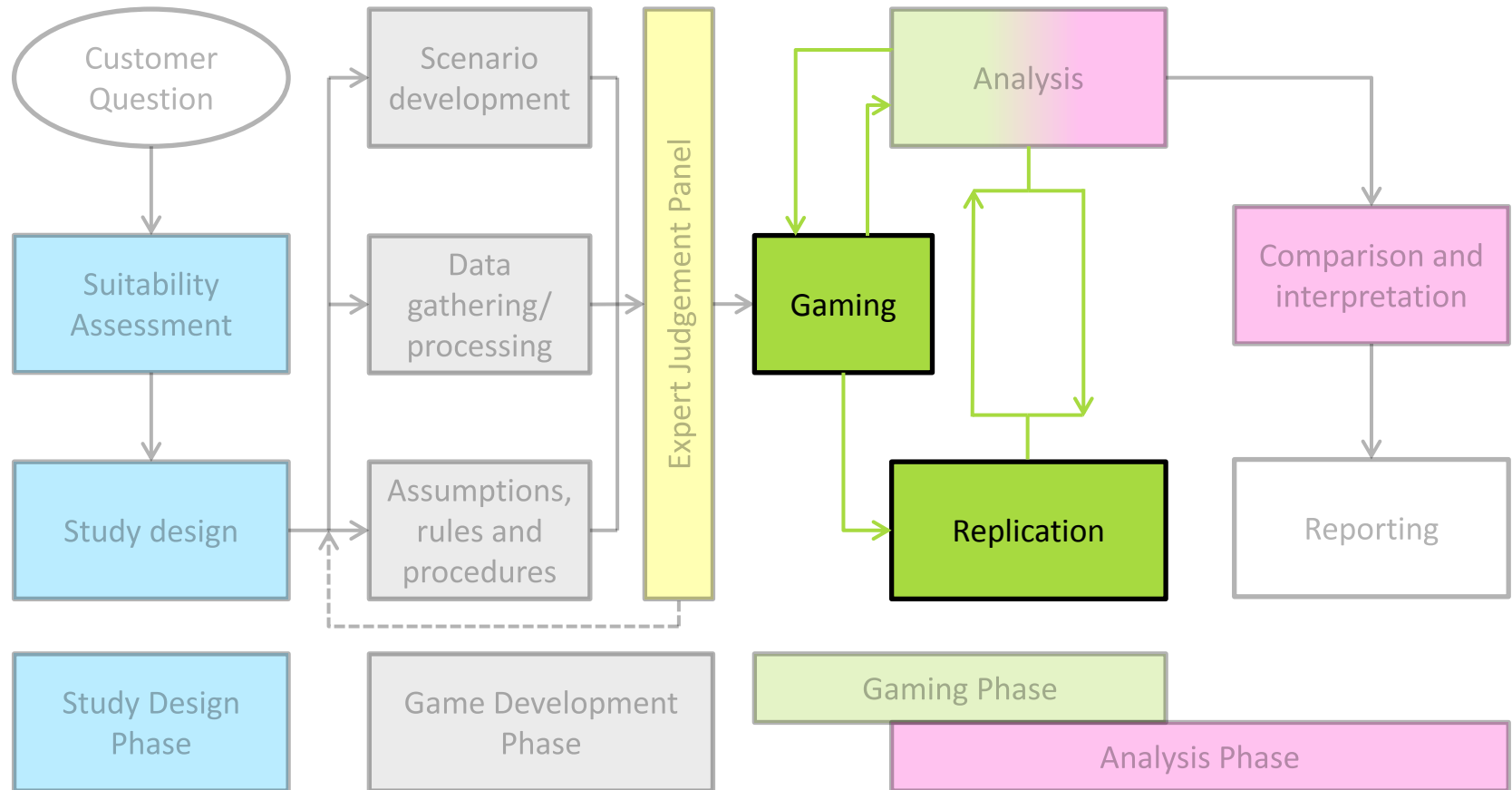
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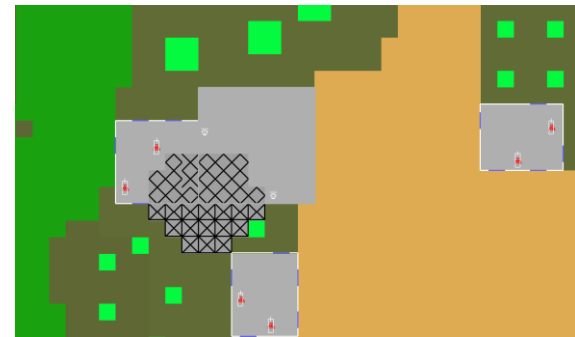
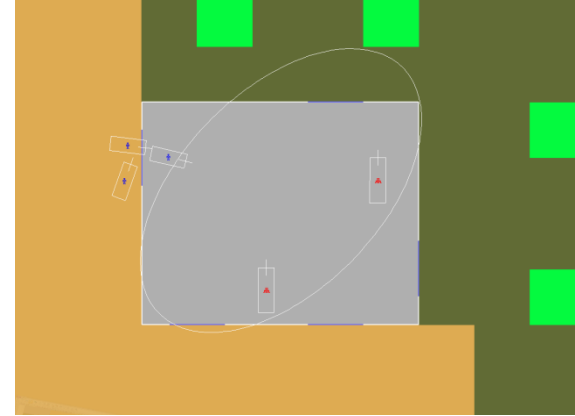


The Gaming Phase

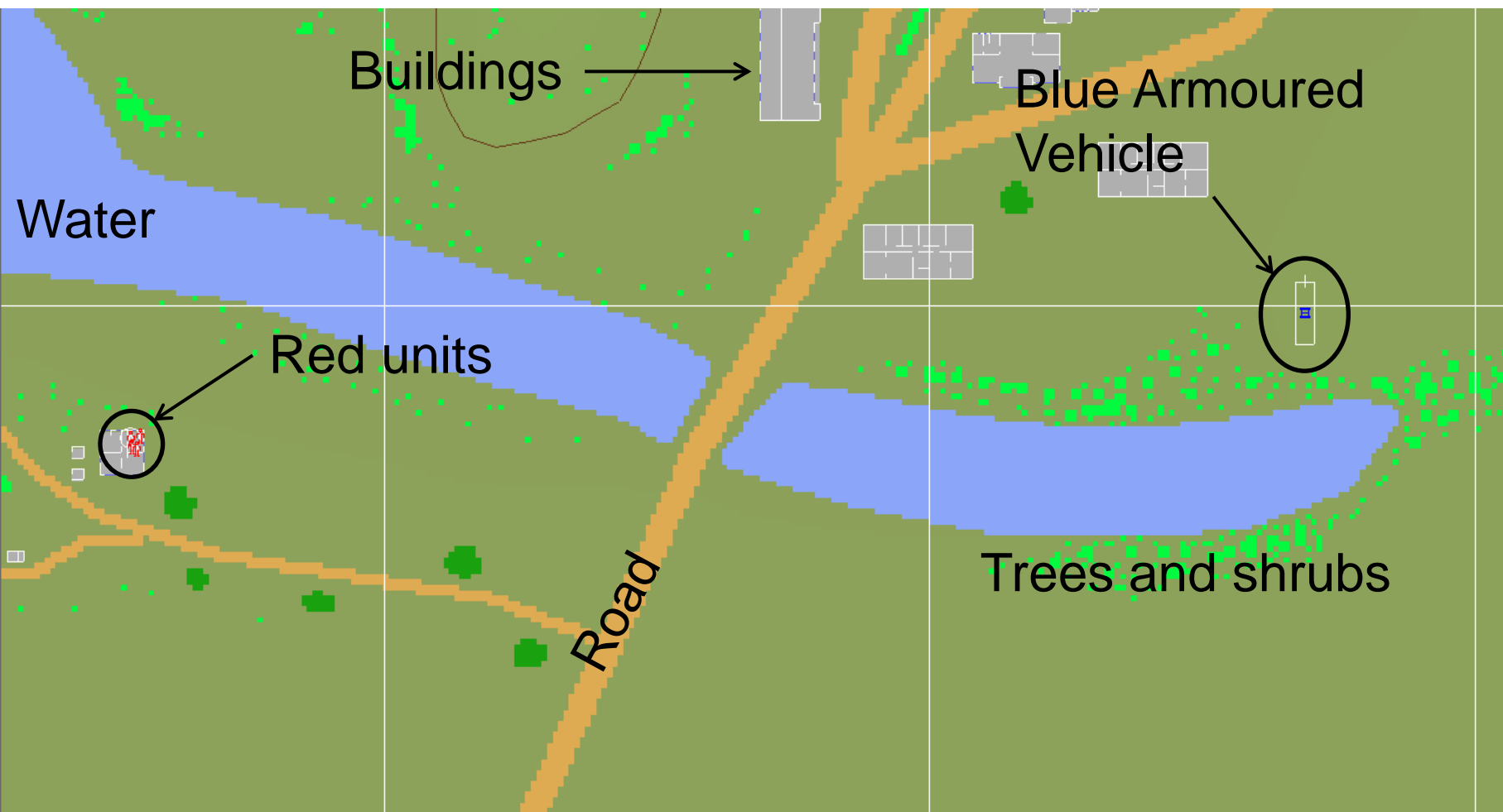


Human in the Loop Gaming in CAEn

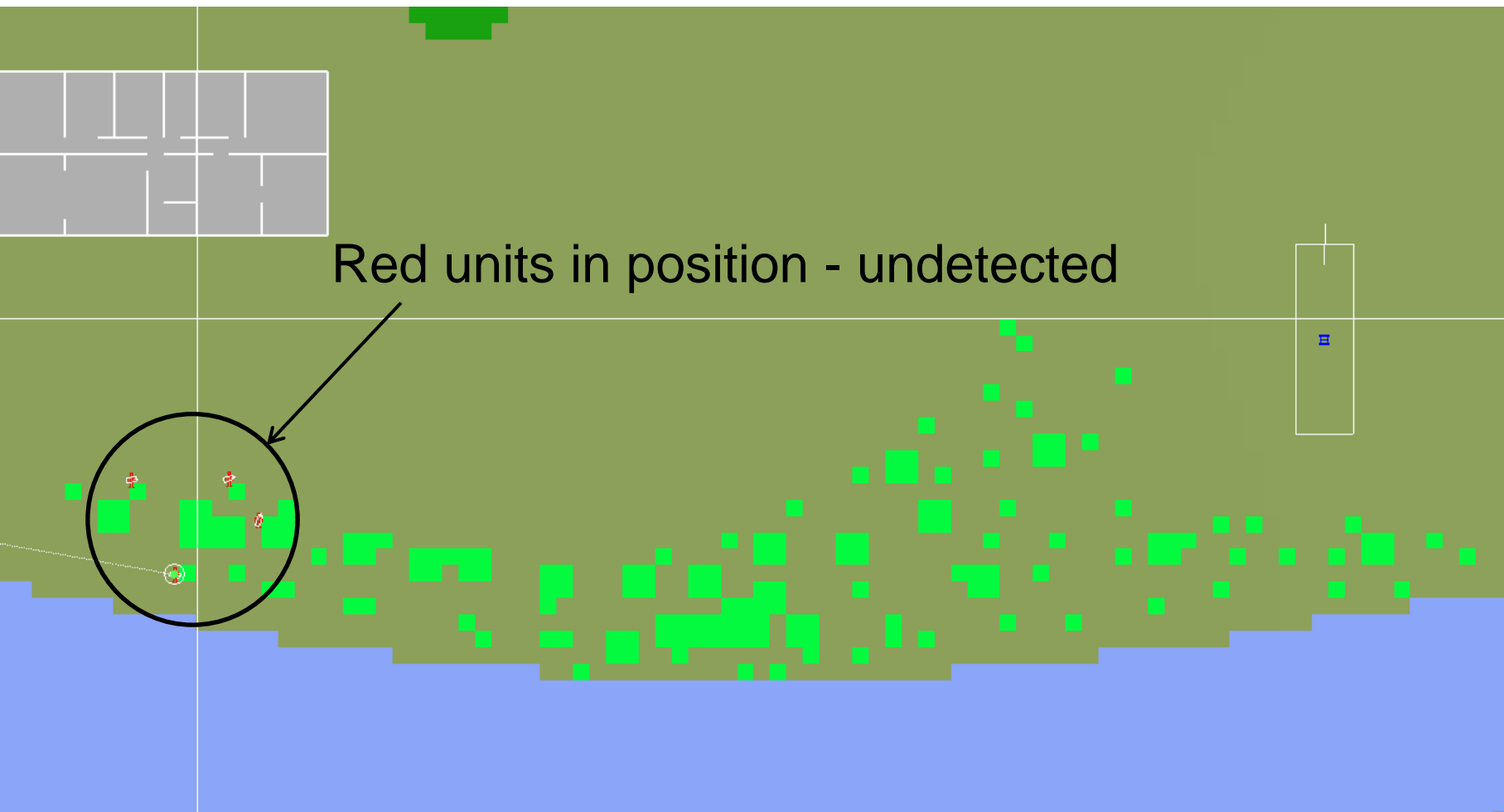
- Wargaming is not separate from replication or analysis
- Beware the unlikely outcome!
- Replays make analysis in context easier and more robust



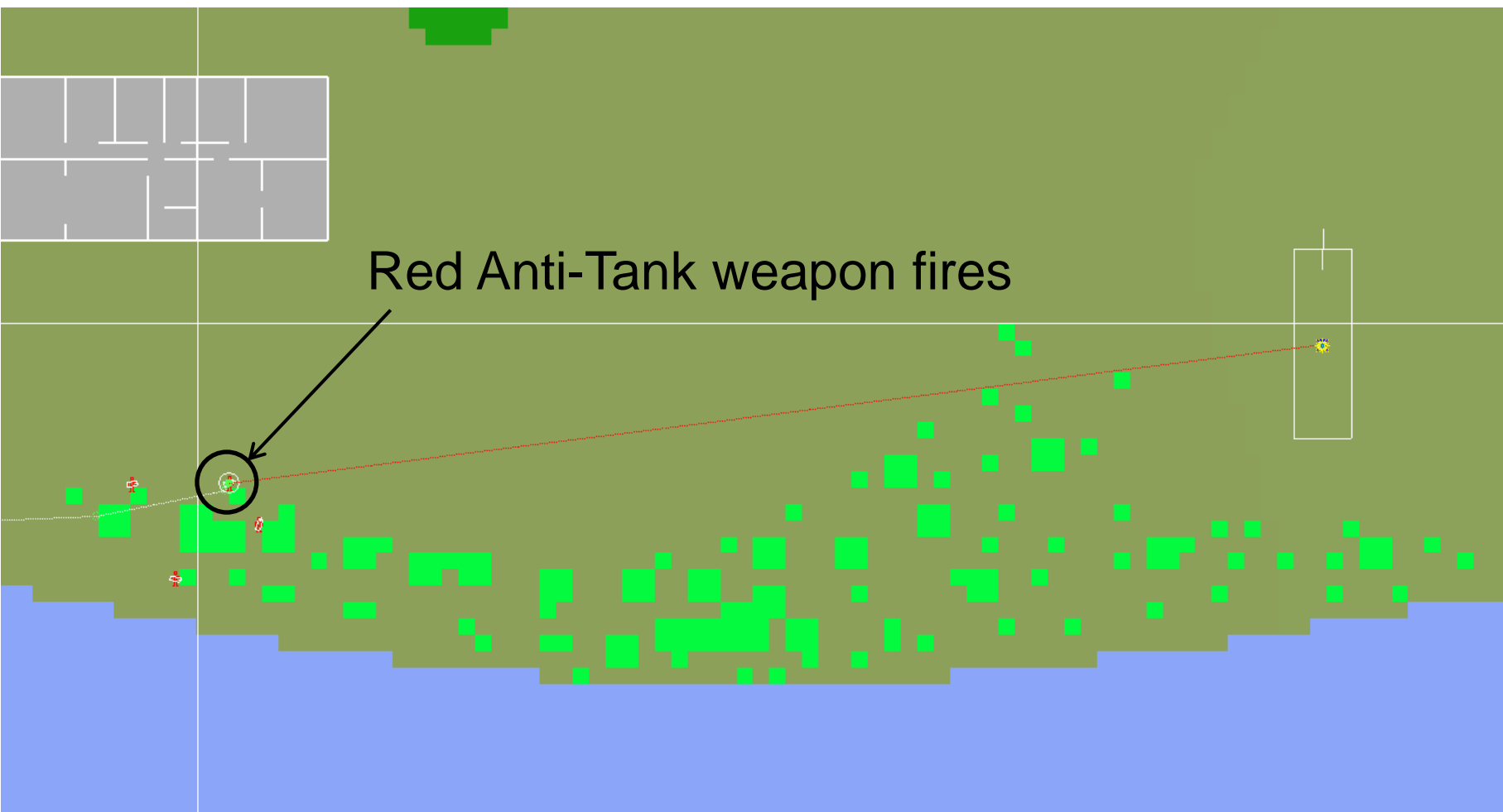
Replication of the wargame



Replication of the wargame

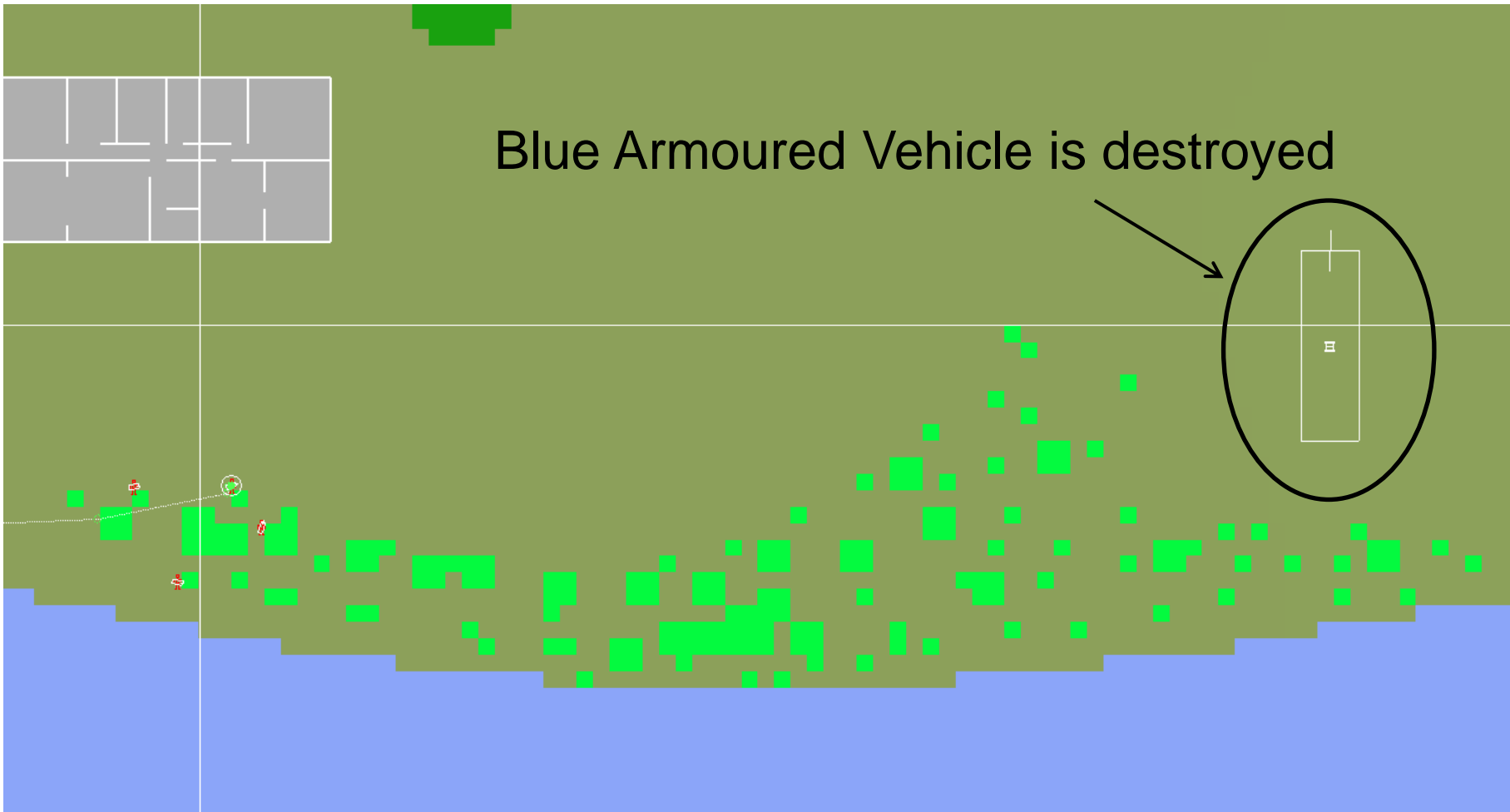


Replication of the wargame

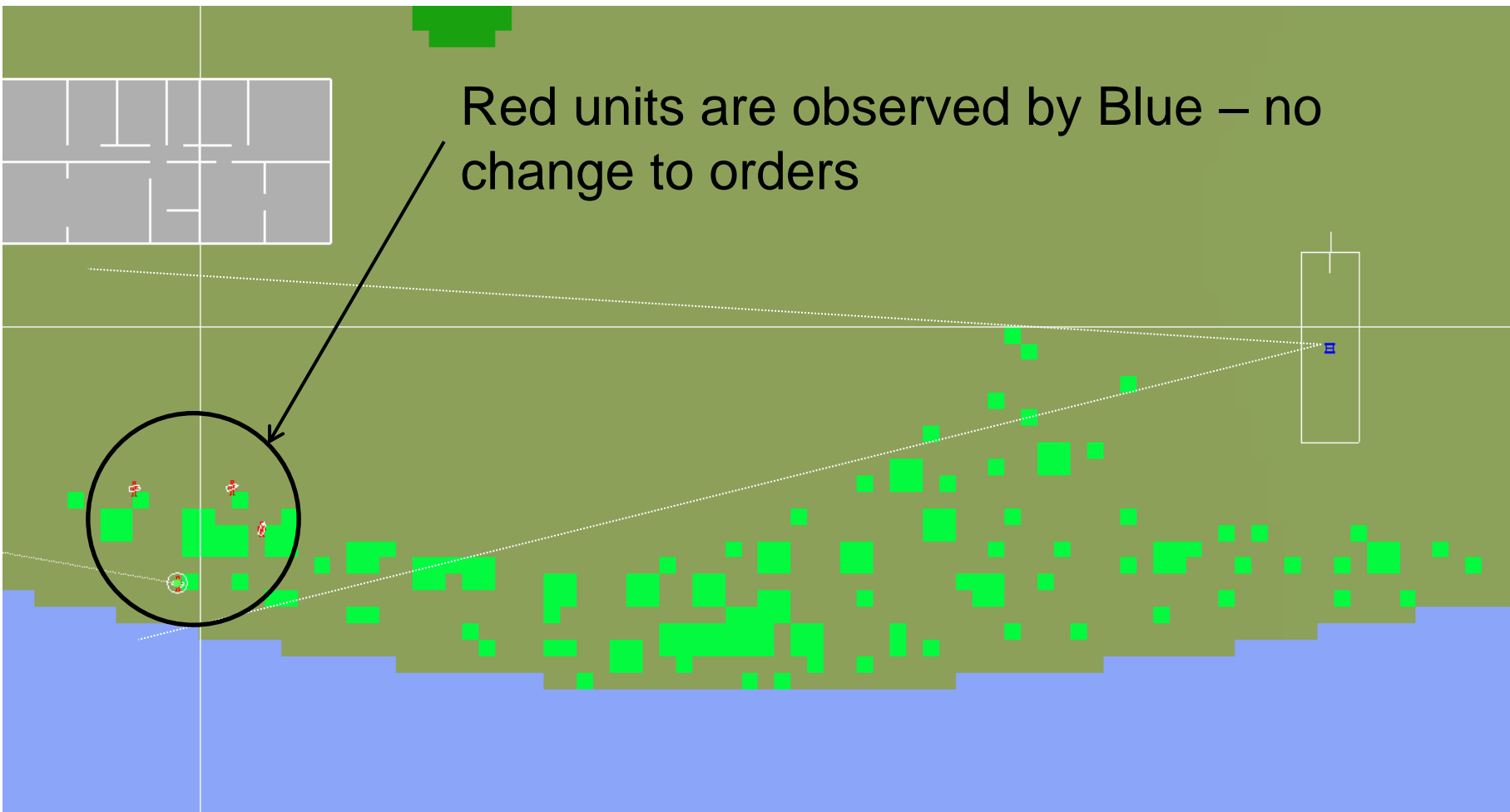


Replication of the wargame

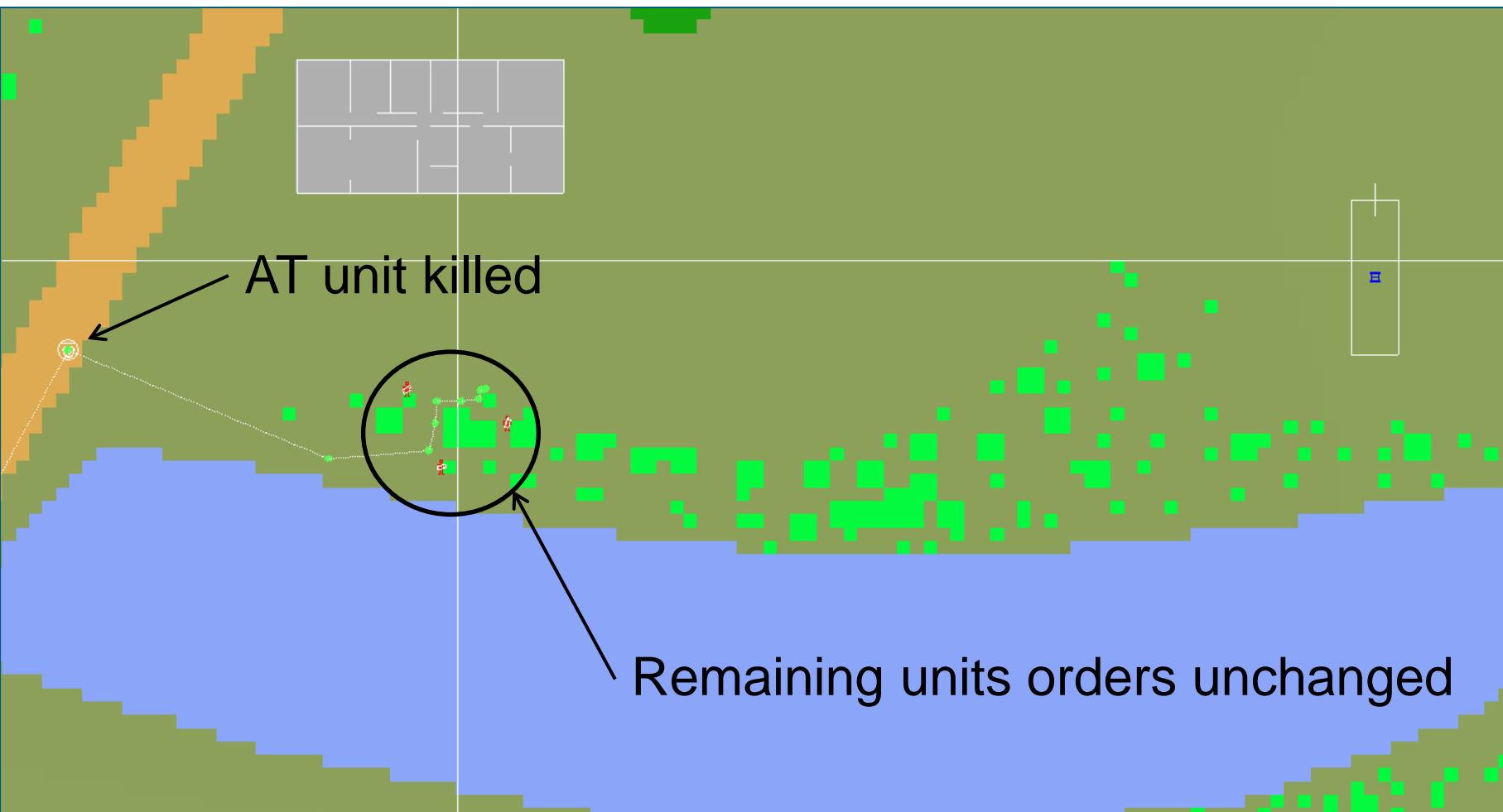
Blue Armoured Vehicle is destroyed



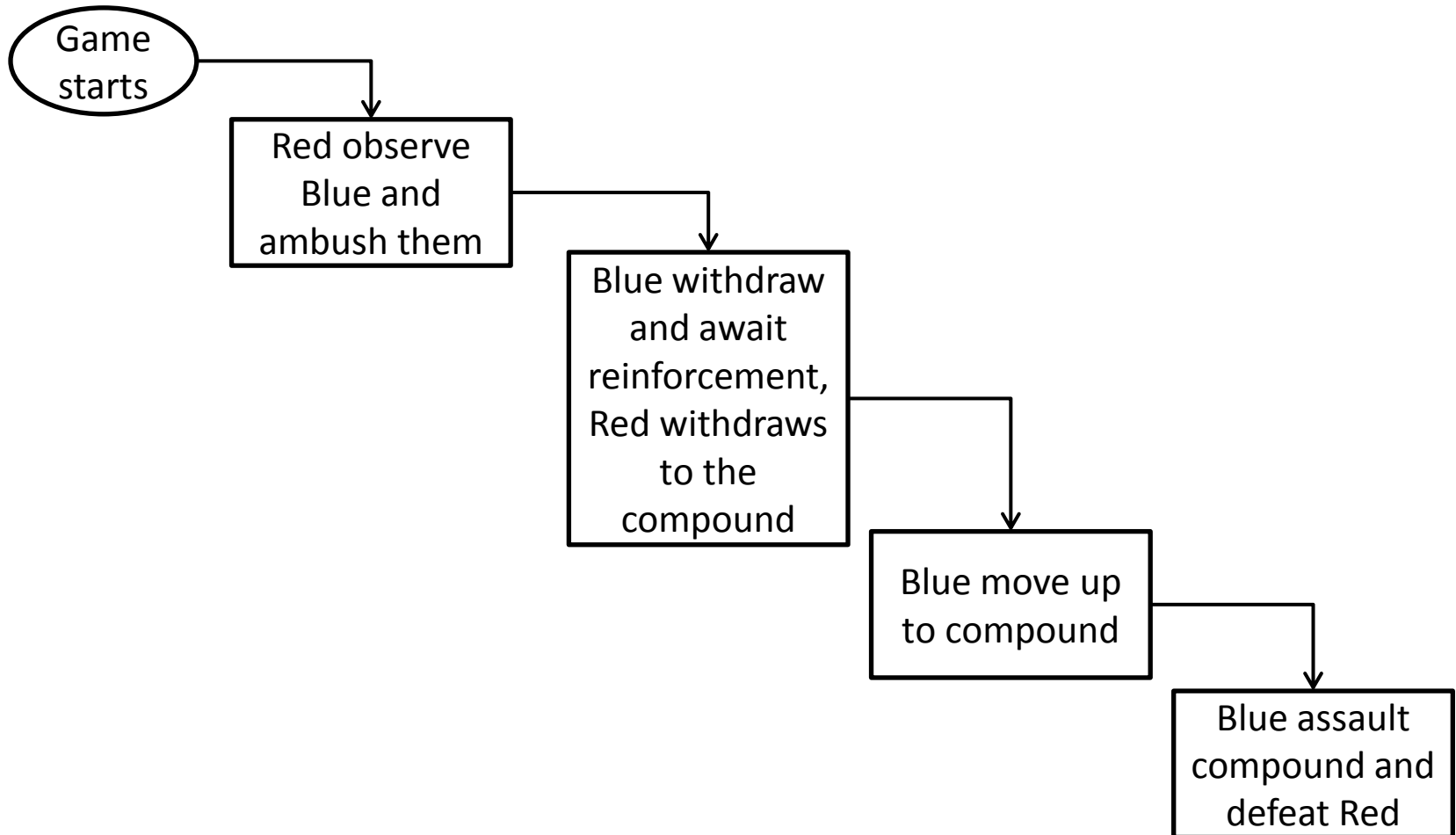
Replication of the wargame



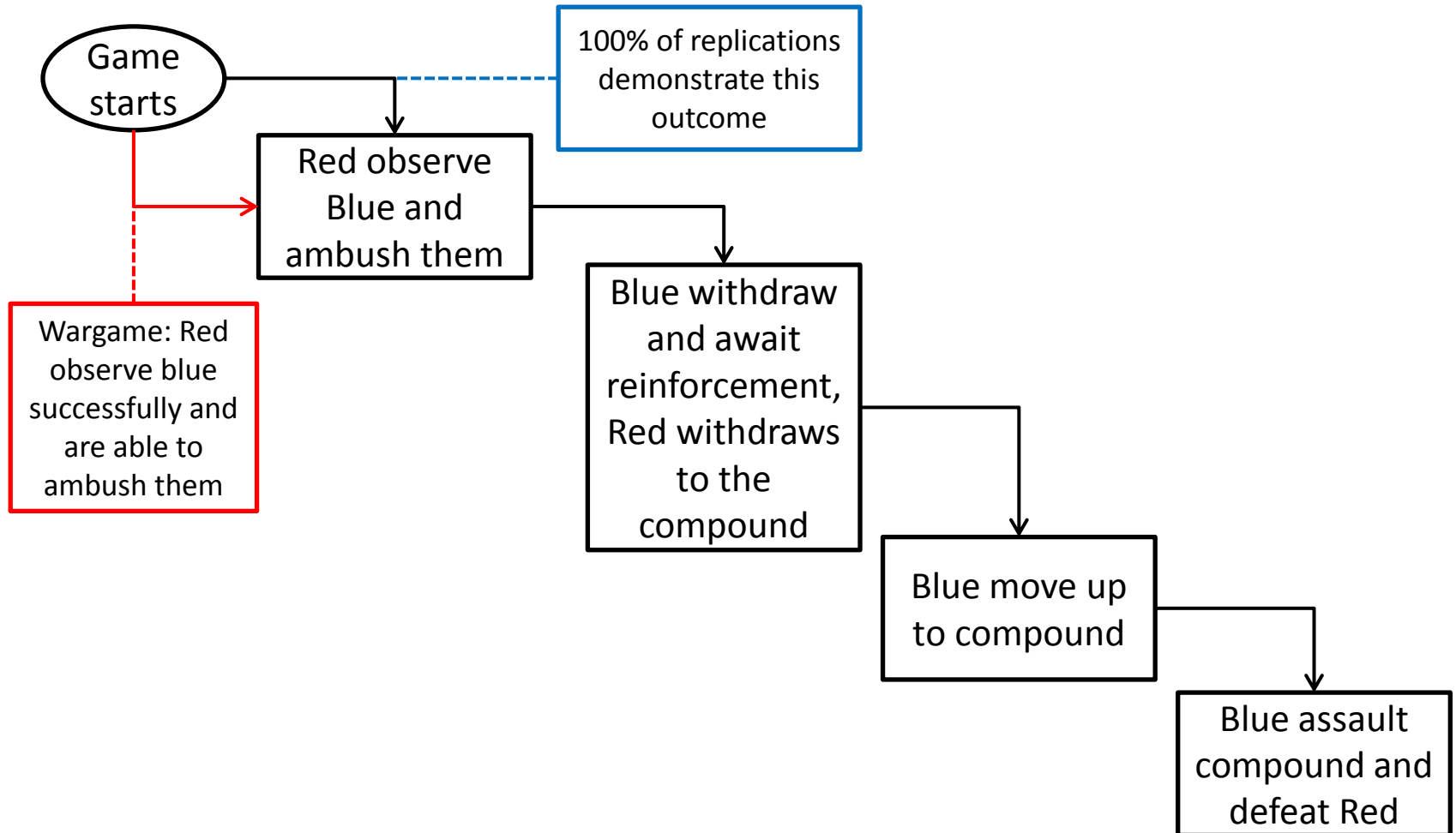
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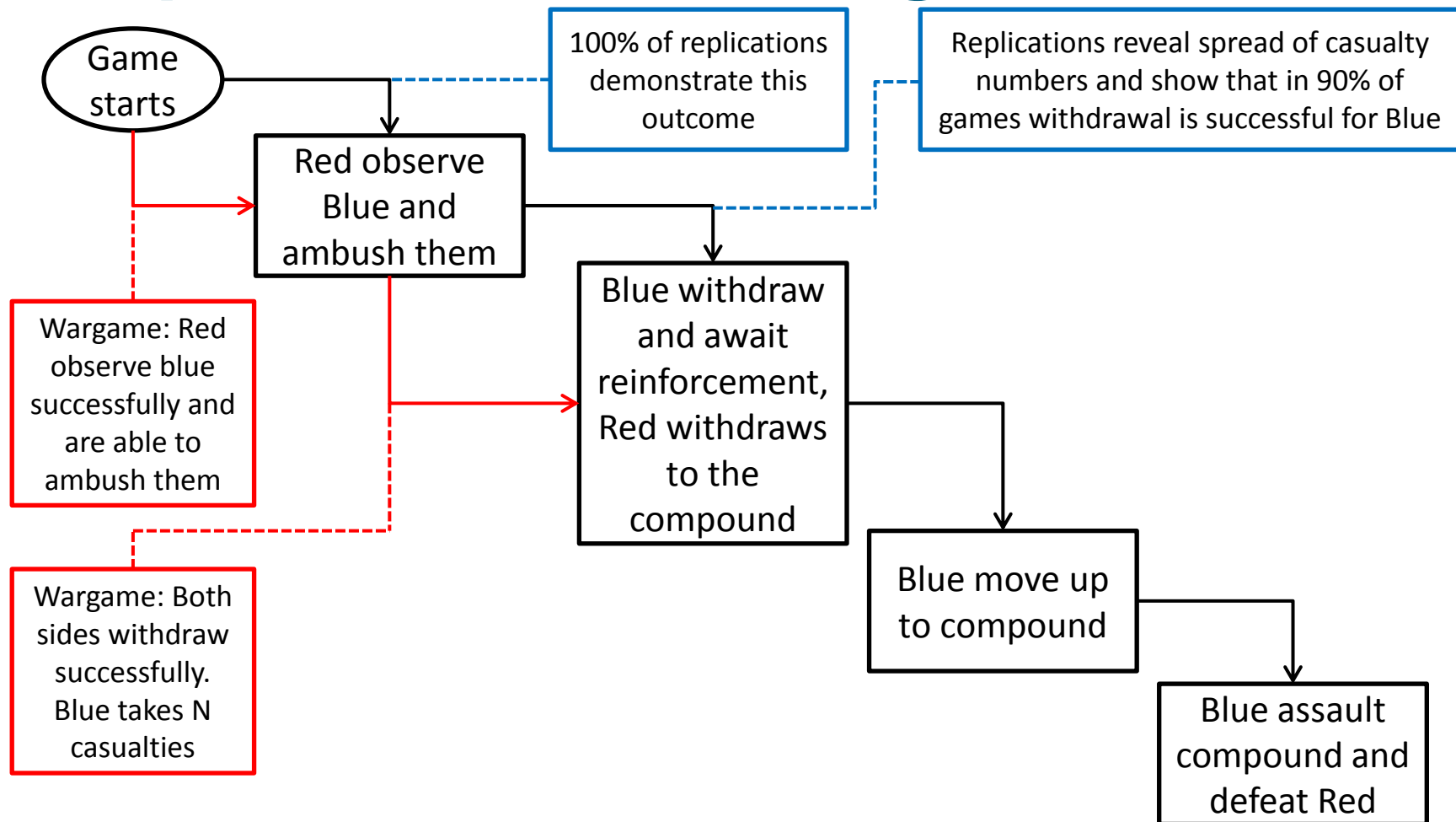
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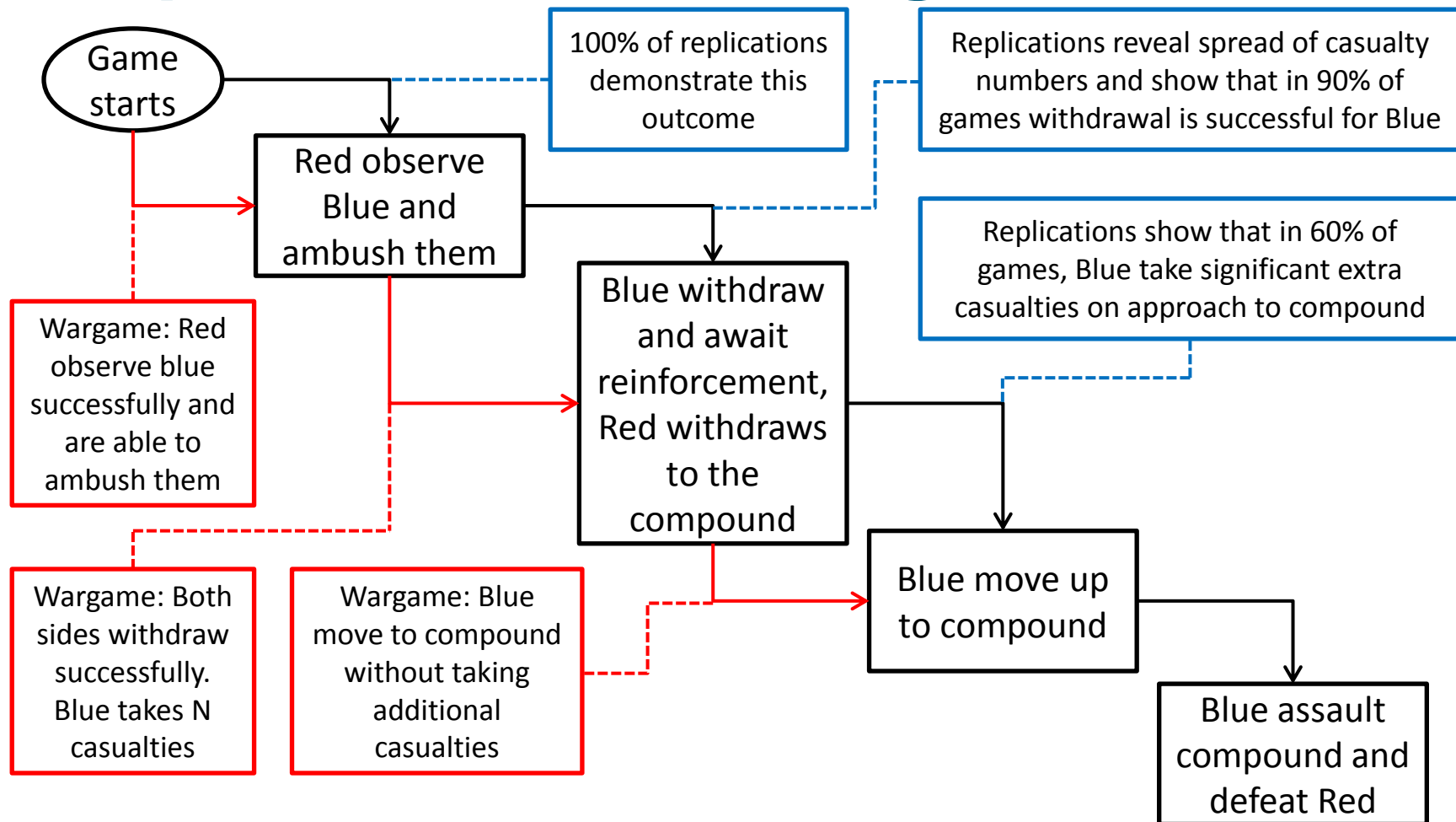
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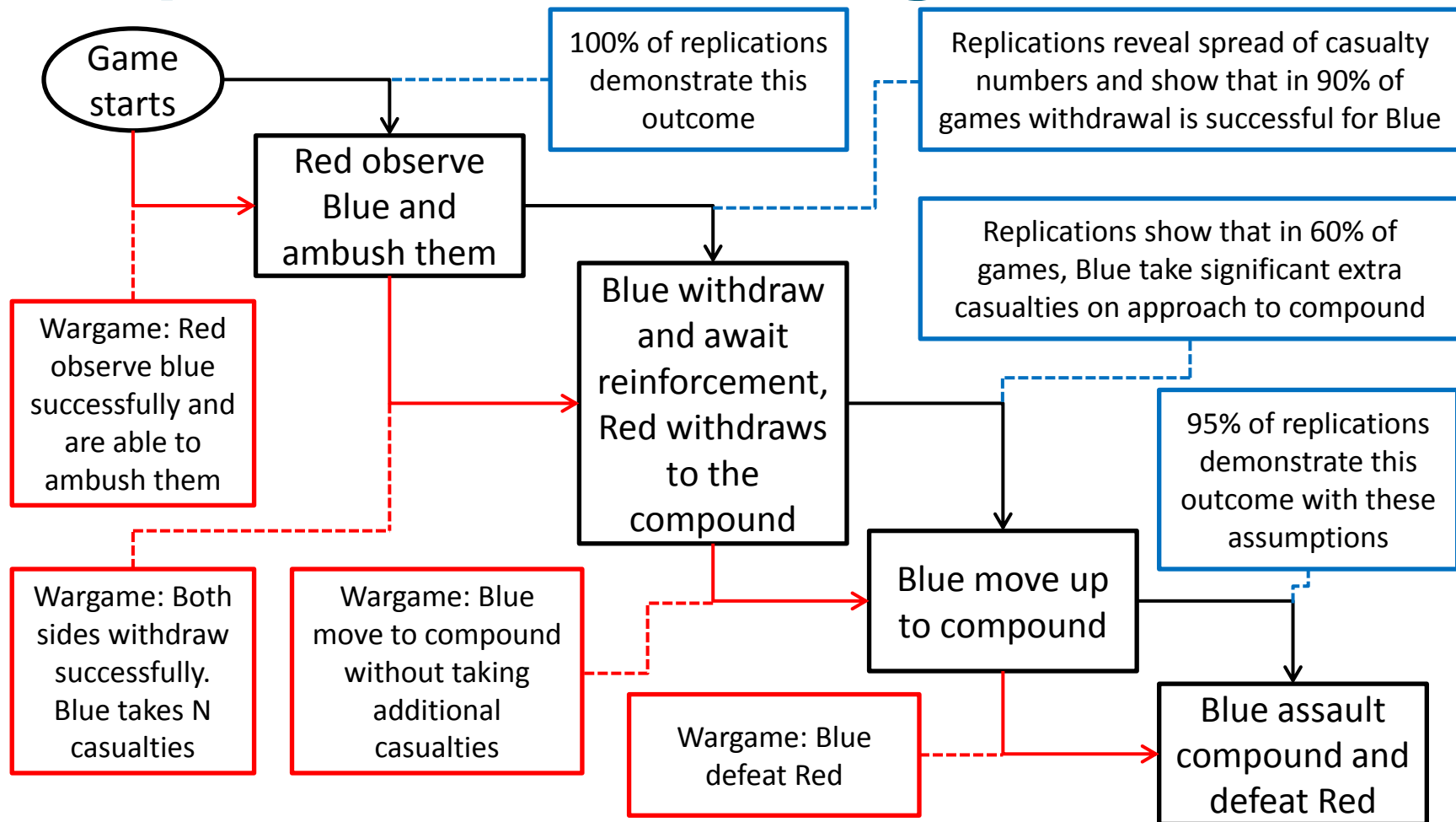
Replication of the wargame



Replication of the wargame



Replication of the wargame



Why use CAEn?

- Incredible graphics



Why use CAEn?

- Honest graphics



Why use CAEn?

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- Unique blend of rigour and creativity

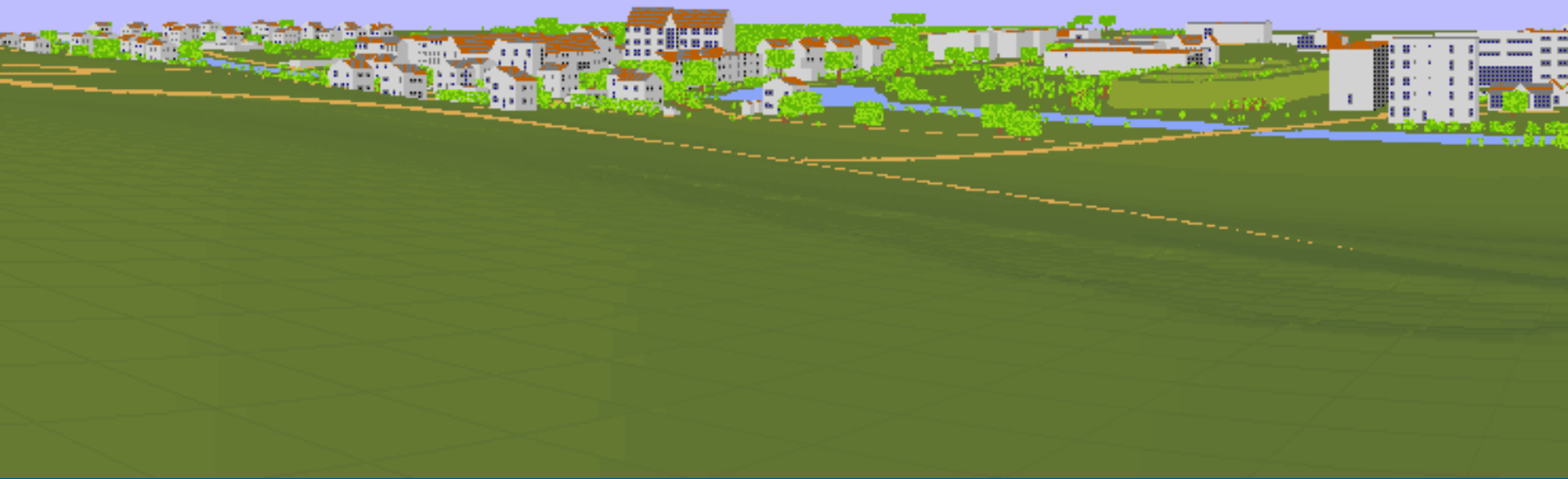
Creativity

Rigour



Why use CAEn?

- Honest graphics
- Unique blend of rigour and creativity
- Relatively quick and cheap (for what it does!)



When not to use CAEn!

- If you are short on time or money
- If you need large scales (force size and/or terrain)
- When your study does not need lots of detailed numeric data

WE OFFER 3 KINDS OF SERVICES
GOOD-CHEAP-FAST
BUT YOU CAN PICK ONLY TWO

GOOD & CHEAP WON'T BE **FAST**
FAST & GOOD WON'T BE **CHEAP**
CHEAP & FAST WON'T BE **GOOD**

So what?

- Having a process helps ensure CAEn studies are of high quality and meet the concept of RIGOUR
- Wargaming is not separate from replication and analysis
- Replicating games is not as simple as it appears
 - Exercise caution!
 - Consider your results in context
 - Note down hidden assumptions when replicating segments of the wargame
- Make computer-based wargaming part of a greater structure



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