



A Knowledge Plane for the Internet

David Clark, Craig Partridge
Chris Ramming, John Wroclawski

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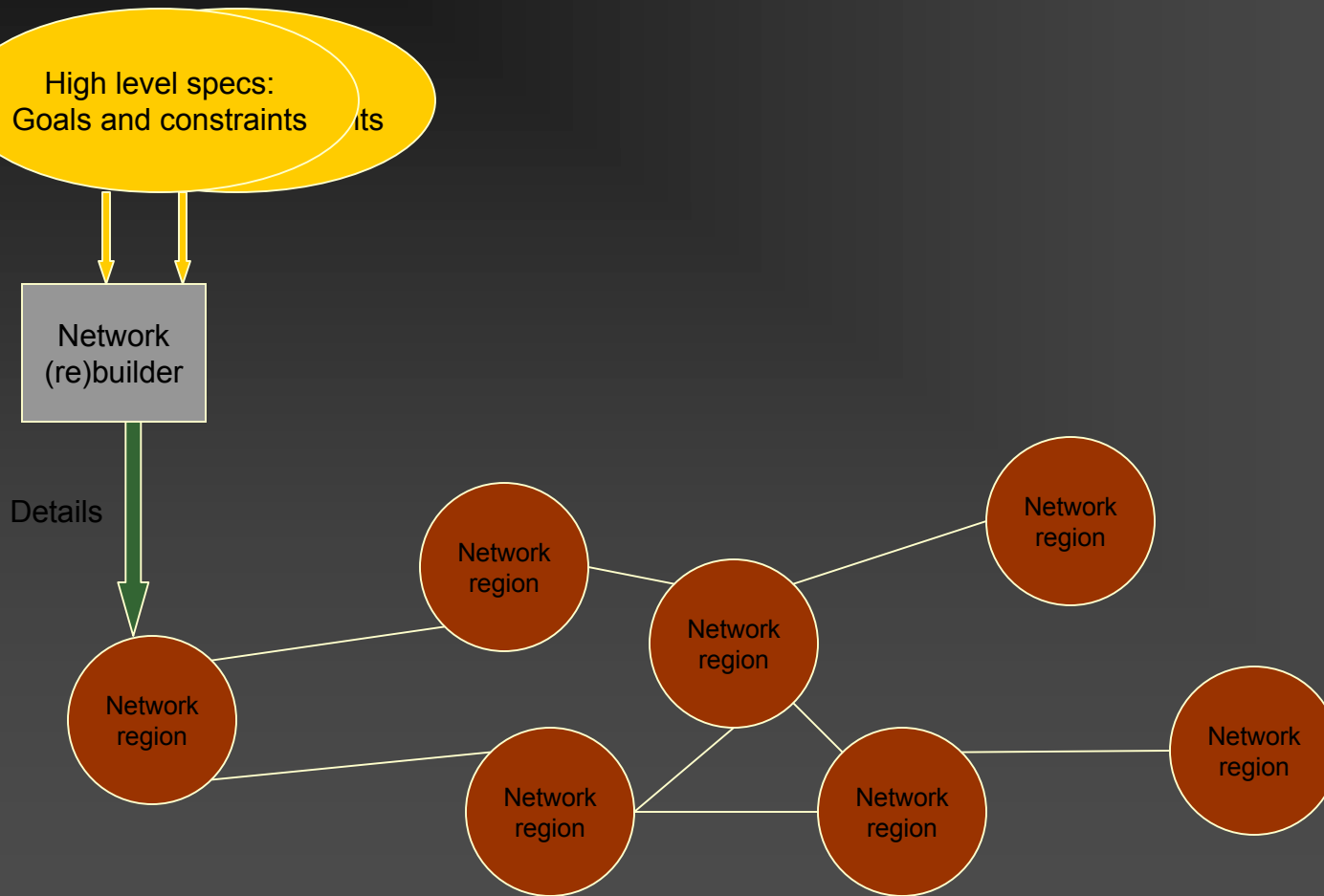
Our Position:

- It is time to take what is good about the Internet, and build a new sort of net that fixes what is wrong with the Internet.
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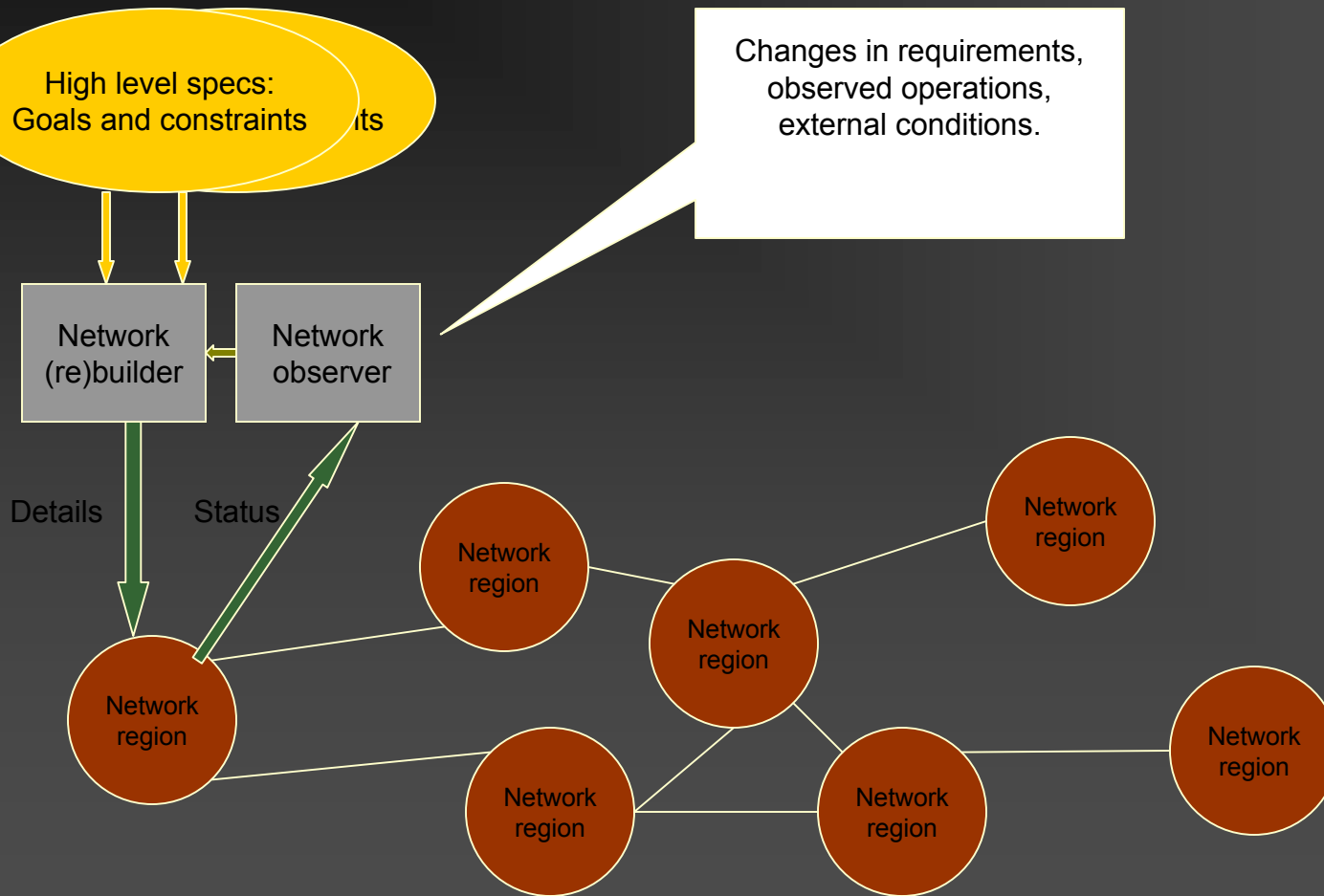
Right and wrong

- What is right: delivering data (when it works).
 - Transparent packet carriage.
 - What is wrong:
 - It cannot tell when an application is not working.
 - It requires the operator to design and build at a very low level.
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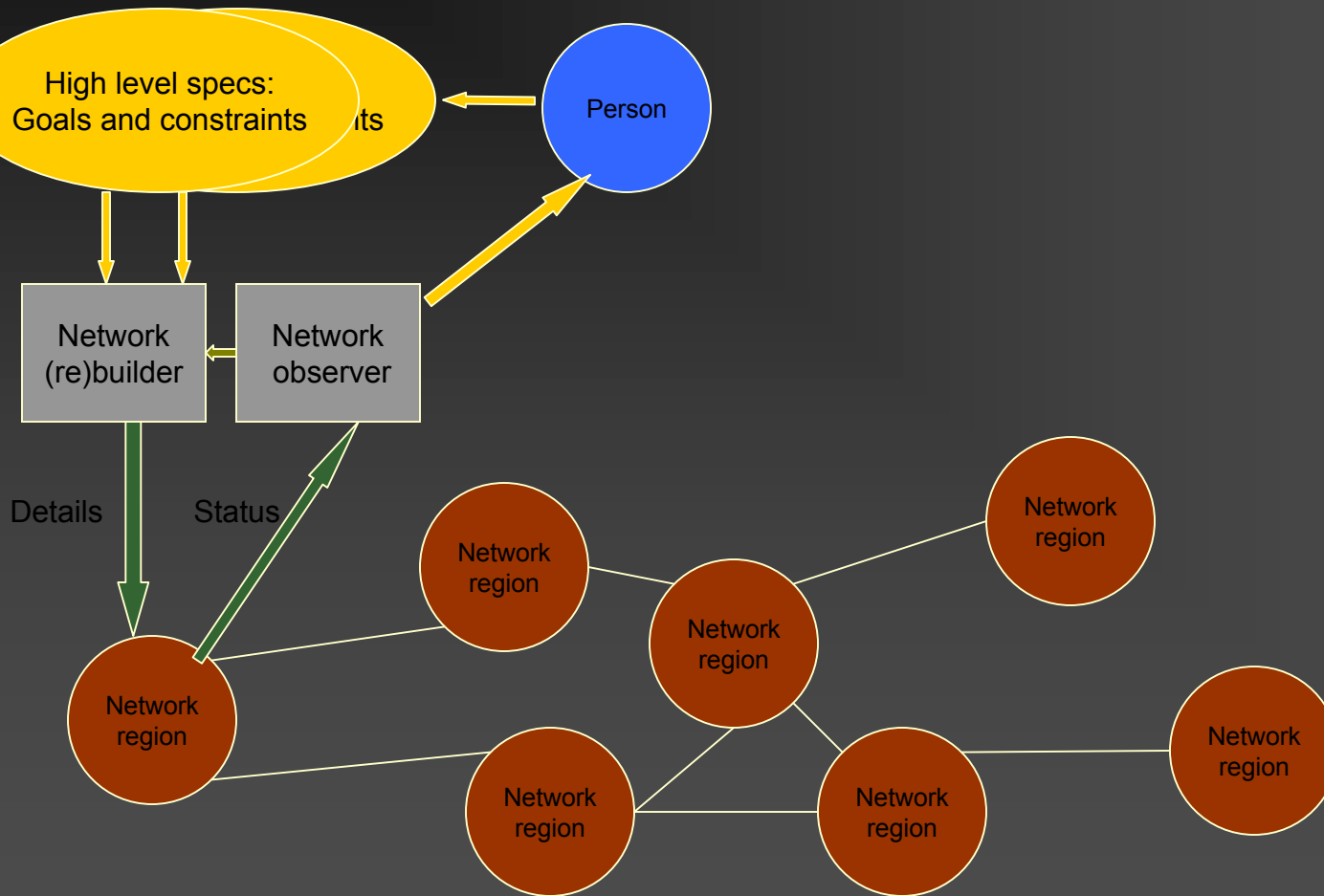
A net that can build itself



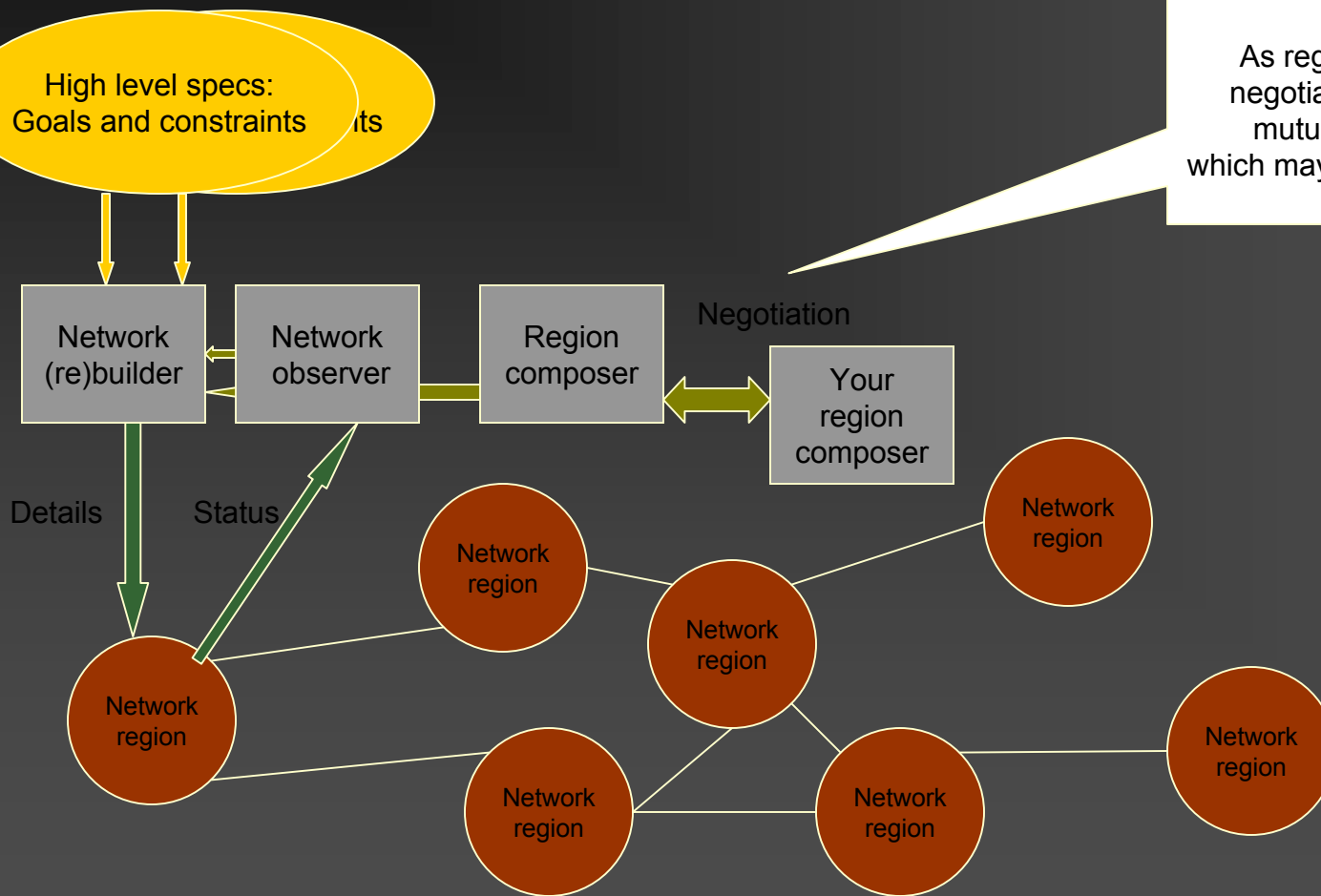
Continuous rebuilding



Help people understand...

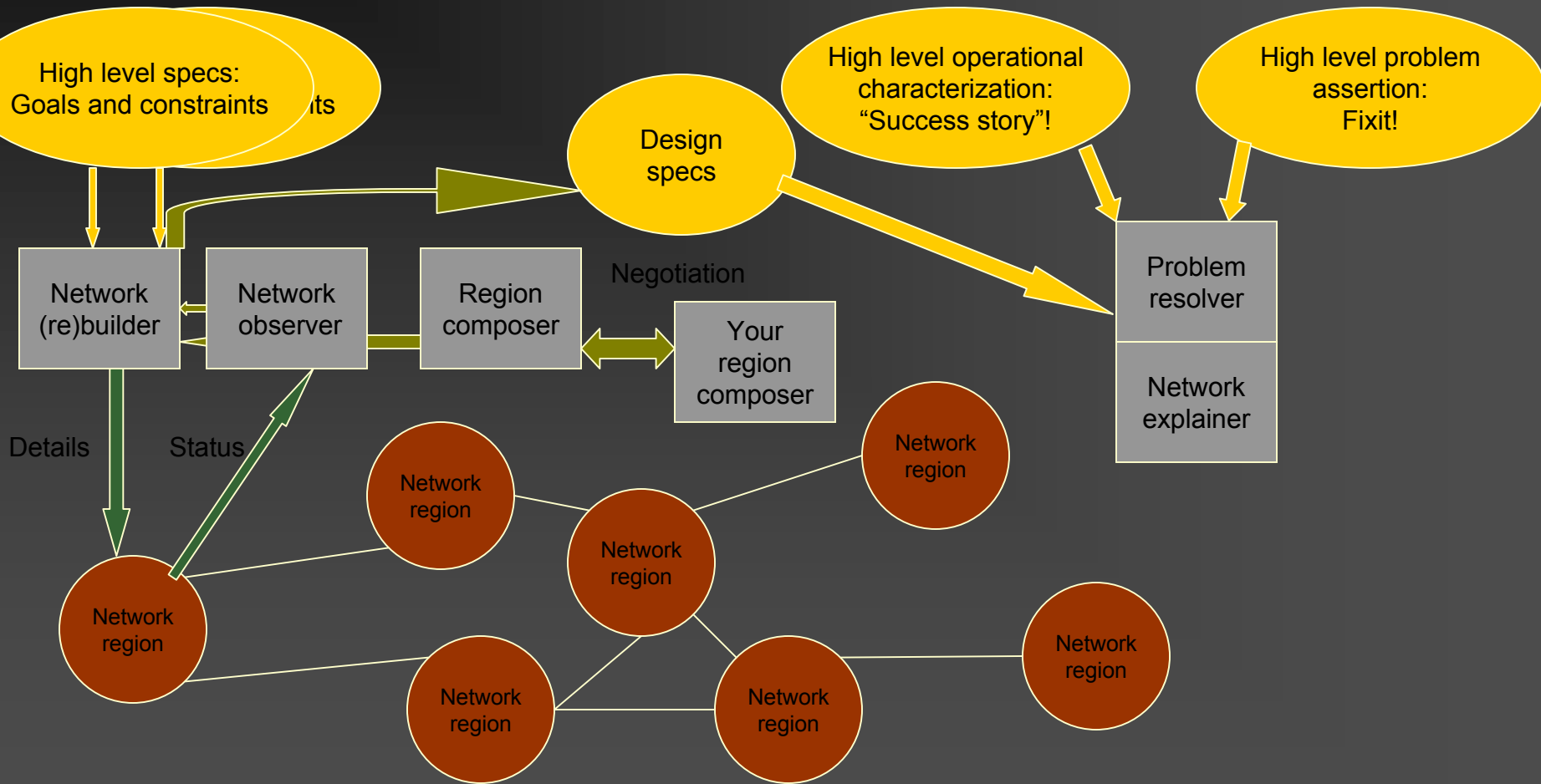


Composition from parts

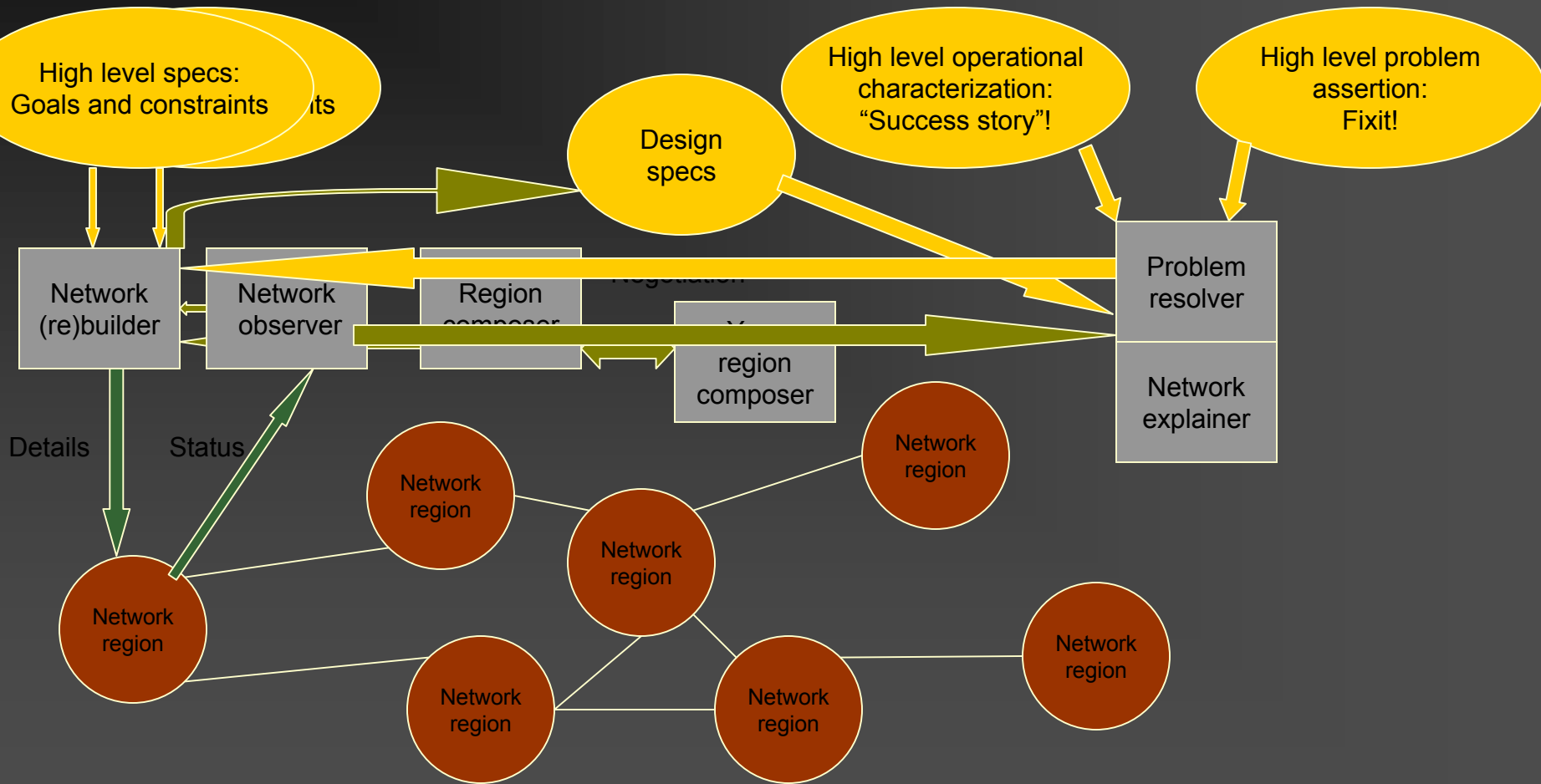


As regions join, they negotiate to determine mutual constraints, which may trigger rebuilding.

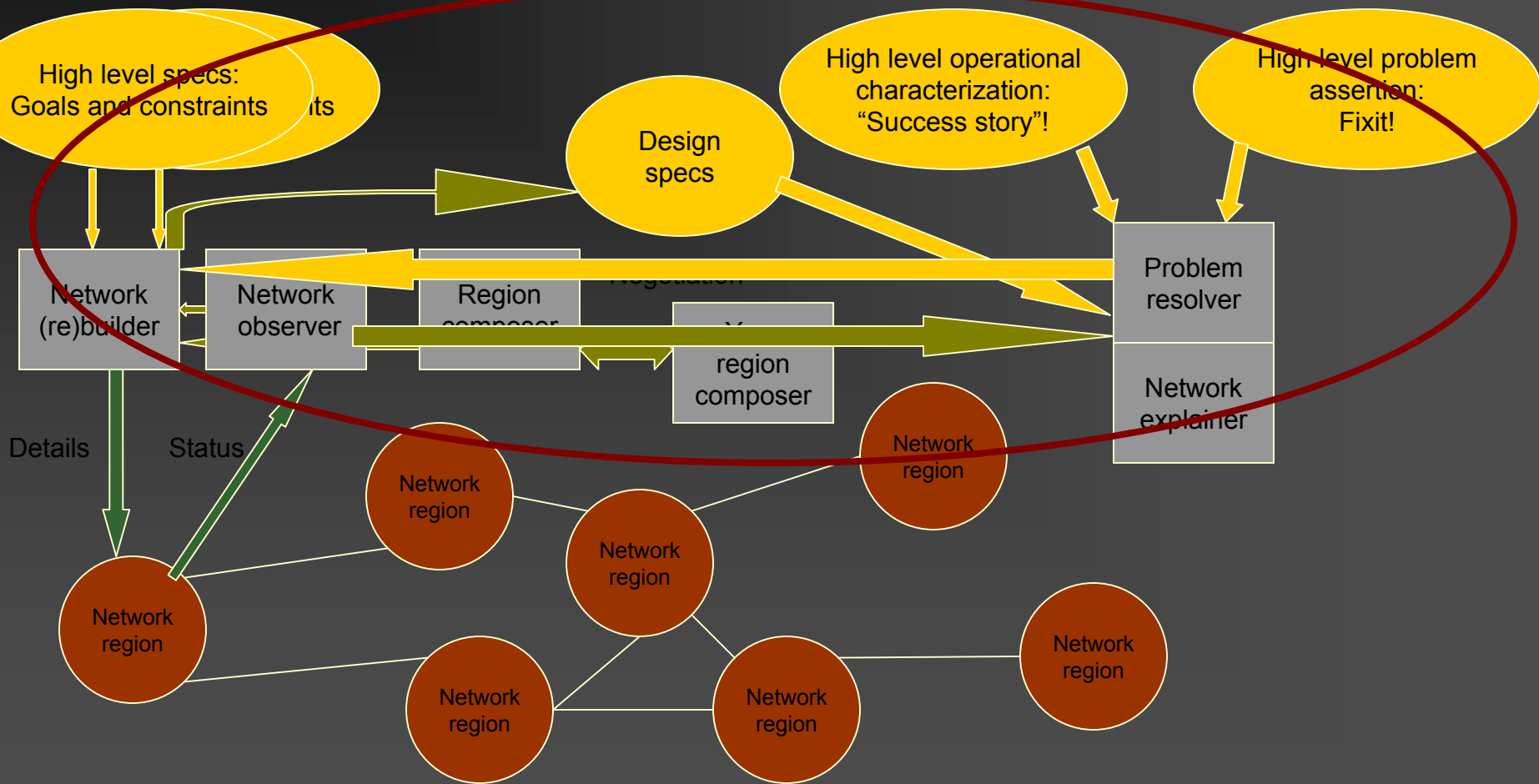
Explain/fix problems



Link lower and higher levels



The Knowledge Plane



Review: we call for:

- An net that builds itself using high-level specification.
 - A network that can translate a high-level assertion that something is wrong into:
 - A fix
 - An explanation
 - This is a very different net from the Internet.
 - We might experiment with knowledge overlays, but...
 - Example: silent errors
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What is different?

- Edge-involvement.
 - Visibility of “application-level” behavior.
 - Global perspective.
 - Compositional structure.
 - Unified approach.
 - Cognitive framework.
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