Stub Network AutoConfiguration proposed charter

Individual IP-capable hosts such as laptops, cell phones and light switches are sold into a market where there is substantial uncertainty about exactly what the network infrastructure link (e.g., WiFi or ethernet) to which they connect will provide, but substantial certainty that they will be able to connect, whether the network infrastructure provides IPv4, dual-stack or IPv6-only service.

The goal of the Stub Network AutoConfiguration working group is to describe a set of mechanisms that, when used together, allow stub networks the same experience: despite the uncertainty as to precisely what services may be available on the network link, the stub network is able to connect automatically to that network, and hosts on the stub network are able to communicate as well as they could if they were connected directly to the infrastructure link.

What this means is that hosts on the stub network and the network link must be mutually discoverable, and mutually reachable. It cannot be the case that hosts on the stub network can connect out, but hosts on the infrastructure network can't discover or connect to hosts on the infrastructure network, as would be the case with a typical home router.

In addition, hosts on the stub network should be able to connect to the internet, if desired, just as well as hosts on the infrastructure network are able to.

Deliverables:
- A document describing a basic set of functionality in a stub network router that would enable mutual discoverability and mutual reachability between stub network hosts and infrastructure link hosts.
- A document (possibly the same document) describing functionality required in a stub router that would allow stub network hosts to connect out to hosts on the internet.
- A document describing functionality in a stub network router that would enable mutual reachability between stub network hosts and hosts on non-adjacent links—that is, not on the link to which the stub network router is directly connected. Such links may be constrained to an administrative domain, or may include the internet.
- A document describing how a stub network router can interface with infrastructure-provided service discovery to enable mutual discoverability between stub network hosts and hosts on the network infrastructure, including the internet.

Non-goals:
- This working group will use existing protocols to accomplish the above deliverables, rather than inventing new protocols.