

The [Architecture 1](#) specification is still in need of behavioral properties that Anoma instances should satisfy. A specific property, in natural language, is

every transaction that user submits will be executed, eventually

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The notion of eventually

here is exactly the one from [linear temporal logic](#), assuming that we can fabricate suitable action alphabets. Another property that we would like is unlikability of nullifiers and their respective commitments, maybe via [information theory](#)? I just don't know and that's why I am writing this...

The purpose of this post is to get a rough delineation between properties that make it into [Architecture 1](#) of the specs, say for Anoma v1, to get started; the delineation might just be two lists, one concerning well understood properties and others that are not yet understood in depth. In other words, I would like to make a collection of such behavioral properties, either in the narrow or wide sense. For the sake of this post, let me hand wave 'narrow' and 'wide' as follows:

- narrow:

we have an idea which theory would allow us to capture this property slickly, e.g., via [differential privacy](#), [information theory](#), [temporal](#) and/or [epistemic](#) logics, game theory / mechanism design;

- wide:

properties that are discussed very hot on twitter and social media, but so far have eluded the fangs of STEM, e.g., UX (for want of a better example that my brain refuses to produce right now) and maybe

governance, but well, I am just desperate for good examples.

In short, this is just intended as condensation point for properties that have probably been discussed in several places, but never been collected in a single document. The post is a wiki, so please feel free to add properties to the two lists yourself, but I am happy to curate the list:

narrow:

- inclusion fairness:
 - "every transaction candidate eventually is included in the mempool"
- LTL
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- LTL
- unbiased inclusion:
 - "every transaction candidate has a fair probability of being included next"
- some kind of Hyper LTL / CTL
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- state machine replication:
 - "under assumptions, Byzantine behavior of a part of the system is not affecting the good properties above"
 - this requires that the abstraction level is low enough to talk about parts of the system
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wide:

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