As a follow up to the intent machine ART (which is going to be published within the next two weeks), we want to make progress in characterizing the hiearchy of games within anoma, by analyzing where boundaries can be drawn and how they relate to each other. The notes below are the result of a meeting with @nikete and @cwgoes

Intro

Here we want to introduce the fast and slow games

Mechanisms of regulation

- How does information flow between games
- Formulation of game relations in terms of a control theoretic and distributed systems approach

Objects and Actors in Games

Controllers

Analyze games around execution and state updates, e.g. around inclusion, censorship and ordering

Solvers

Analyze barter auctions and solving

Time Relations

Introduce Time relations along different dimensions (bandwidth, compute, etc.)

Can we derive bounds of welfare extraction related to time relations of games:

- how do the shapes of the functions for extraction look like to fast actors
- how does aggregate data look like to slower actors
- what are the costs of verification/auditing procedures necessary to regulate to regulate a fast game from a slower one
- Given this data, and auditing procedure costs, how do bounds look like?

Try and formulate/draft (coarse) quantifications for expected and worst case scenarios.

Mechanisms

- Introduce the purposes of mechanisms for controllers and solvers
- The slow game will likely want to decide on properties of mechanisms to be approximated, or research to be performed into what might be possible, e.g. request examples along a tradeoff frontier, s.t. better decision can be made in the next round or slower games

Analysis of a single slow game

Work out an example in detail with a single fast and slow game.

Analysis of multiple slow games

Work out an example of multiple, interacting slow games, up to the slowest game

Slowest game

This is the fixed point in respect to the time operator. Decisions in this game do not come from any slower/outer game.

Future Work

Span the bridge to further reports on specific slow and fast games which are of practical interest to the running of the anoma network.