

Agent01StdAgent: Portfolio Negotiation for SCML Standard

Team 403

ANAC 2026 SCML Standard Track

Abstract

Agent01StdAgent is a lightweight portfolio negotiation agent for the SCML Standard track. It extends the Team 403 OneShot idea of accepting simultaneous offers as a portfolio rather than as independent bilateral decisions. The submitted Standard version directly subclasses `StdSyncAgent`, evaluates current-step offer subsets using the official utility function, and uses a role-aware production target for middle-level factories.

1 Motivation

In SCML Standard, the agent negotiates over quantity, delivery time, and unit price. Future contracts can hedge against missing supply or sales, but they also expose the agent to inventory, shortfall, and bad-price risk. A stable competition submission should therefore avoid fragile stateful assumptions and should make conservative use of future commitments.

2 Agent Design

The agent subclasses `StdSyncAgent`. At every synchronous callback, it collects all current-step offers, searches over offer subsets, and accepts the subset with the highest portfolio score if it improves over the no-acceptance baseline by a small margin. For small numbers of concurrent offers the search is exact; for larger offer sets a beam-search fallback is used.

The Standard setting allows future delivery contracts. We implemented a cross-time portfolio score, but local stress tests showed that actively initiating future contracts was unstable in the current version. The submitted agent therefore keeps future contracting disabled and focuses on robust current-step portfolio decisions. This is a conservative extension of the OneShot method, not a tuned GreedyStdAgent wrapper.

Field	Value
Agent name	agent01 standard variant
Module path	agent01std.core.agent
Class name	Agent01StdAgent
Base class	StdSyncAgent
Uses LLM	No

Parameter	Value
concession exponent	0.55
acceptance slack	0.006
future score weight	0.0
middle-level production target	0.78
early over-order fraction	0.14
late over-order fraction	0.02

3 Validation

Local validation used the available `anac2024_std` tournament runner from `scml==0.7.7`. Import checks and smoke tournaments completed successfully. In small local comparisons, the current-step portfolio variant was more stable than versions that actively proposed future contracts. These results are only used as submission sanity checks; the live leaderboard remains the primary signal.

4 Planned Work

The next iteration should re-enable future contracts only after a stronger cross-time value model is validated. The research direction is to score current and future contracts jointly, using estimated future capacity, inventory, and penalty risk. That would connect the Standard agent more deeply to the OneShot portfolio-selection work and provide a stronger basis for a research paper.