

## THE UNIT OF WORK

# The Agent Task Packet

Why the unit of work is the unit of value.

An autonomous agent is only as good as what it is handed. Point one at a raw firehose and it must parse fields, infer meaning, and decide what is true before it can do anything useful — slow, costly, and error-prone. Signal Fabric removes that burden by delivering work as a single governed artifact: the **Agent Task Packet**. The packet is the contract between high-velocity data and agent execution, and it is where the platform's value concentrates.

Each packet pairs a **processed signal object** — what is true — with a **work instruction** — what to do about it, wrapped in routing, integrity, and governance metadata. Together they let an agent execute without ever touching raw telemetry. One object replaces the source-specific parsing every agent would otherwise repeat.

## WHAT A PACKET CARRIES

## PROCESSED SIGNAL OBJECT

**What is true**

**Time & source** — event time, origin, provenance hash

**Entity** — asset identity and observed relationships

**Features** — derived rates, periodicity, graph signals

**Correlation** — links across time and across streams

**Prediction** — value and confidence, model or rule

**Governance** — tenant, classification, export policy

## WORK INSTRUCTION

**What to do**

**Task type** — investigate, classify, simulate, remediate

**Required capability** — the agent profile this needs

**Evidence requirements** — roles that must be present

**Latency class** — the urgency band for routing

**Allowed / prohibited tools** — the bounded toolset

**Approval & feedback** — sign-off and outcome capture

**ENVELOPE METADATA** packet id · routing tags · integrity (hash · signature · sequence · expiration) · tenant & policy — for provenance, ordering, replay control, and tenant isolation.

## 1 object

Replaces the many source schemas an agent would otherwise parse to act.

## 2 halves

Evidence and instruction travel together — never assembled from separate places.

## 0 raw records

The agent parses none; all context arrives precomputed and governed.

# Why the packet is the asset, not the byproduct.

Most systems move, store, or visualize data. The Agent Task Packet does something different: it converts data into executable work. Six properties give it that value, each rooted in how the packet is built.

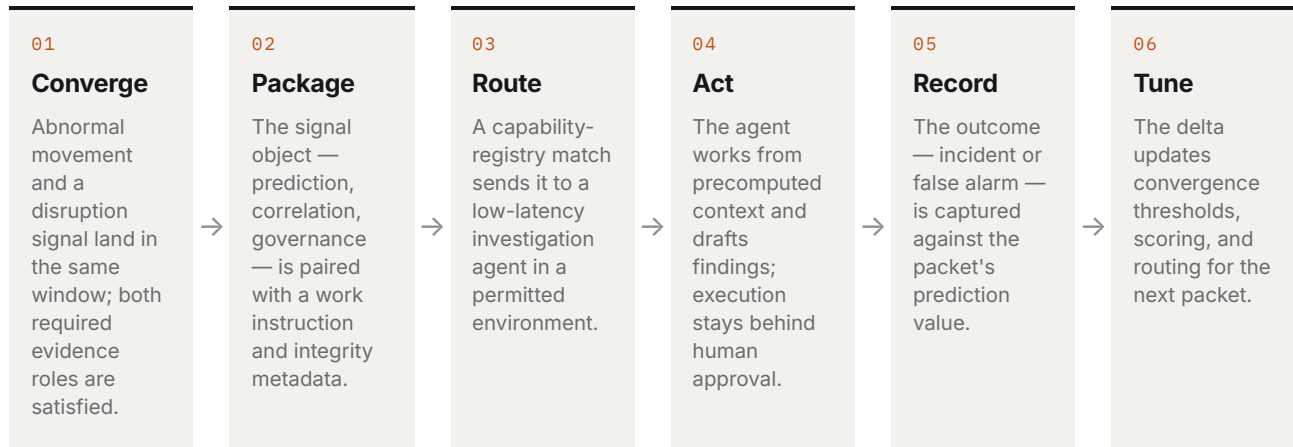
<p><b>01</b></p> <p><b>One contract, any source to any agent</b></p> <p>A telemetry source keeps its own schema; the agent sees one normalized object. The packet <b>decouples arbitrary streams from arbitrary agents</b>, so streams can be mixed and matched — and a newly added firehose never breaks an existing agent.</p>	<p><b>02</b></p> <p><b>Context is precomputed</b></p> <p>Parsing, enrichment, correlation, scoring, and prediction happen <b>once, before delivery</b>. The agent receives ready context instead of raw data and spends its budget on the task, not on rediscovering the world. Token and compute cost fall.</p>
<p><b>03</b></p> <p><b>Evidence-gated and governed</b></p> <p>A cross-domain packet is actionable only when <b>every required evidence role is present</b>; partial evidence is a review candidate, not a command. Governance tags travel with the data, restricted fields are transformed before delivery, and hidden streams are forbidden.</p>	<p><b>04</b></p> <p><b>Prediction-guided routing</b></p> <p>Packet fields are matched against an agent capability registry, so each packet reaches an agent suited to its <b>latency class, tools, governance level, and prior performance</b>. The right work reaches the right agent, automatically.</p>
<p><b>05</b></p> <p><b>It closes the feedback loop</b></p> <p>The packet carries the prediction that is later compared to the real outcome, plus a feedback flag. Recorded outcomes <b>tune scoring, routing, enrichment, and prediction</b> — the system improves at the speed of the data, with source provenance preserved.</p>	<p><b>06</b></p> <p><b>Portable and provider-neutral</b></p> <p>Before export, a governance transform strips restricted fields while preserving approved prediction, feature, and instruction values. The same packet can drive a <b>code-gen tool, a notebook, or a workflow engine</b> — without binding the platform to any one provider.</p>

## Integrity by construction

The packet is not merely convenient; it is auditable. Its envelope metadata — hash, signature, sequence number, and expiration — supports provenance, ordering, replay control, and tenant isolation. Because nothing a packet relies on can be hidden, every action it drives can be explained after the fact.

# From convergence to outcome.

Consider a cyber-physical convergence thesis: act when abnormal network movement on a critical route coincides with a real-world disruption signal in the same window. A single packet carries that judgment through its full lifecycle.



## WHAT THE PACKET REPLACED

Without it, the agent would have to discover the relevant streams, reconcile their formats, judge whether the evidence was sufficient, and invent a path to act — every time, probabilistically. The packet does that work deterministically and hands over a bounded, governed result.

## WHY IT COMPOUNDS

Each packet produces an outcome record, and each record sharpens the next packet. Value accumulates as streams, agents, and outcomes grow — coverage widens and routing tightens without enlarging what any single agent must read.

### THE TAKEAWAY

## The packet is the asset.

Dashboards visualize, data lakes store, and event buses transport — none of them produce executable work. The Agent Task Packet turns latent, high-velocity data into a bounded, explainable, governed unit an agent can act on. It is the part of Signal Fabric that converts real-time telemetry into outcomes, and the part that grows more valuable the longer the platform runs.

## **SD** Streaming Defense

Mechanics in this brief reflect the Signal Fabric Predictive Operations system and the provisional patent *Systems and Methods for Real-Time Telemetry Normalization, Prediction-Guided Agent Routing, and Automated Outcome Generation*. Streaming Defense Confidential.

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