The Quality Management Interface

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Review -- What is the goal?

Separate the core QoS semantics from the details of how it is achieved.

- **Reveal the semantics.**
  - **Freeze them, live with them.**
- **Hide the details.**
  - **Change them, fight over them.**

The QM Interface

Needed -- an interface that expresses the desired semantics.

- Application can call on resource management code in known manner.

Use predictive service as an example.

- Its more complicated.

The role of the application.

What must the application do?

- Send and/or receive packets.
- Determine the playback point.
  - Control tightness of bound and loss rates.

What <u>might</u> the application do?

- Determine the actual end to end delay?
  - If there are timestamps in the packets?
- Know the desired delay target.

There can be lots of way to control the delivery delay.

- The application need not know these details.

A very simple QMI

Two variables set by the application and read by the resource management module.

- current_overall_delay
  - derived from time-stamps otherwise 0
- desired_overall_delay
  - If known, set by user, otherwise 0

How would the application use this interface?

Too simple, but an example

- Level of effort predictive service:
  - If both current and desired > 0
  - then if current > desired, try a better class, else if current << desired, try a worse one.
  - otherwise, ask the user how it's doing.
- Predictive service with advertised bounds.
  - If desired > 0
  - then pick class based on desired

Application does not know what sort of service is being used.

A more complex version of the QMI

Receiver setup phase:

- **Traffic shape (What the data looks like)**
- **Filter (what the packets look like)**
- **Authorization**
- **Abstract service requirement**
  - **Desired overall delay; loss rate**

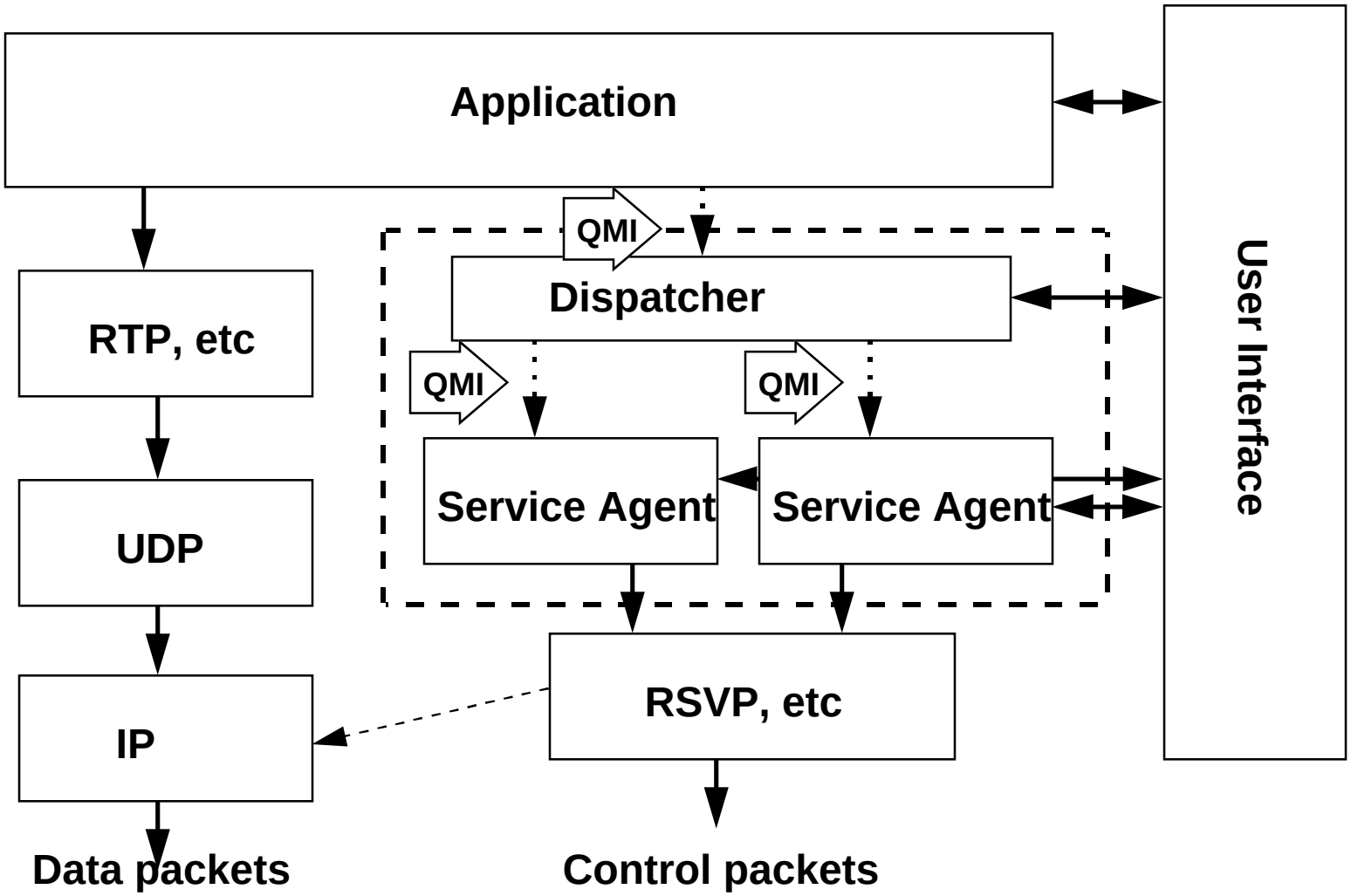
Ongoing phase:

- **Current overall delay**
- **Desired overall delay**
- **Current loss rate**
- **Desired loss rate**
- **Costs**

The Quality Management Interface

What the application need not know

- How many predictive services are in use.
- What information is advertised
- What the costs are for each service.

The Quality Management Interface

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