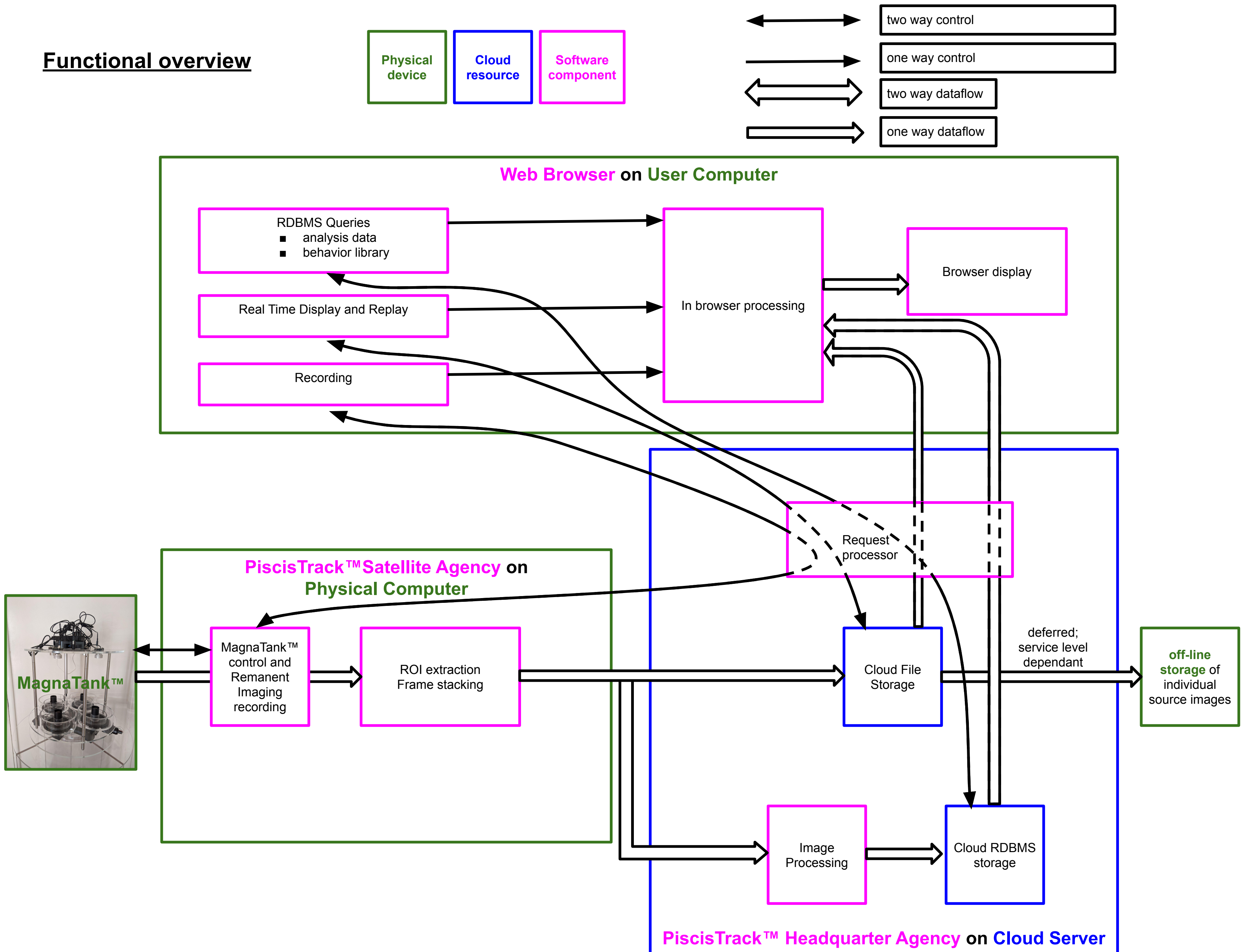# PiscisTrack™ Architecture

The PiscisTrack™ software architecture, illustrated below, is designed on the following foundational principles:

- Process data according to a dataflow model. As much as possible, recorded pixel values are processed as they are streamed from the camera rather than stored as images to be processed post-mortem after a recording is complete. This model provides support for uninterrupted, continuous recording.
- Store images as sequences of individual frames rather than as video files.
- Handle, store, and query analysis data along a relational database model.
- All user interface components run in web browsers for universal accessibility.
- PiscisTrack™ software agencies (details below) are launched as programs on physical or cloud based servers, or within a user browser by visiting a dedicated URL.

Functional overview

Physical device | Cloud resource | Software component

two way control
one way control
two way dataflow
one way dataflow

Web Browser on **User Computer**

RDBMS Queries
- analysis data
- behavior library

Real Time Display and Replay

Recording

In browser processing

Browser display

Request processor

PiscisTrack™ Satellite Agency on **Physical Computer**

MagnaTank™

MagnaTank™ control and Remanent Imaging recording

ROI extraction Frame stacking

Cloud File Storage

deferred; service level dependant

off-line storage of individual source images

Image Processing

Cloud RDBMS storage

PiscisTrack™ Headquarter Agency on **Cloud Server**

Agency / agent model overview

Agency's key functions:
- span (and pipeline) server or client agent(s)
- create and manage channels for data and control
- manage communication with other agency(ies)

Resources

Physical resources
e.g., cameras

Cloud resources
e.g., files (images) or databases

Agency (on physical computer or cloud VM)

Server agent

[Processing agent(s)]...

[In stream agency(ies)]...

HTTP and / or WebSocket

Browser Agency

End User

Client agent

[Processing and] display agent