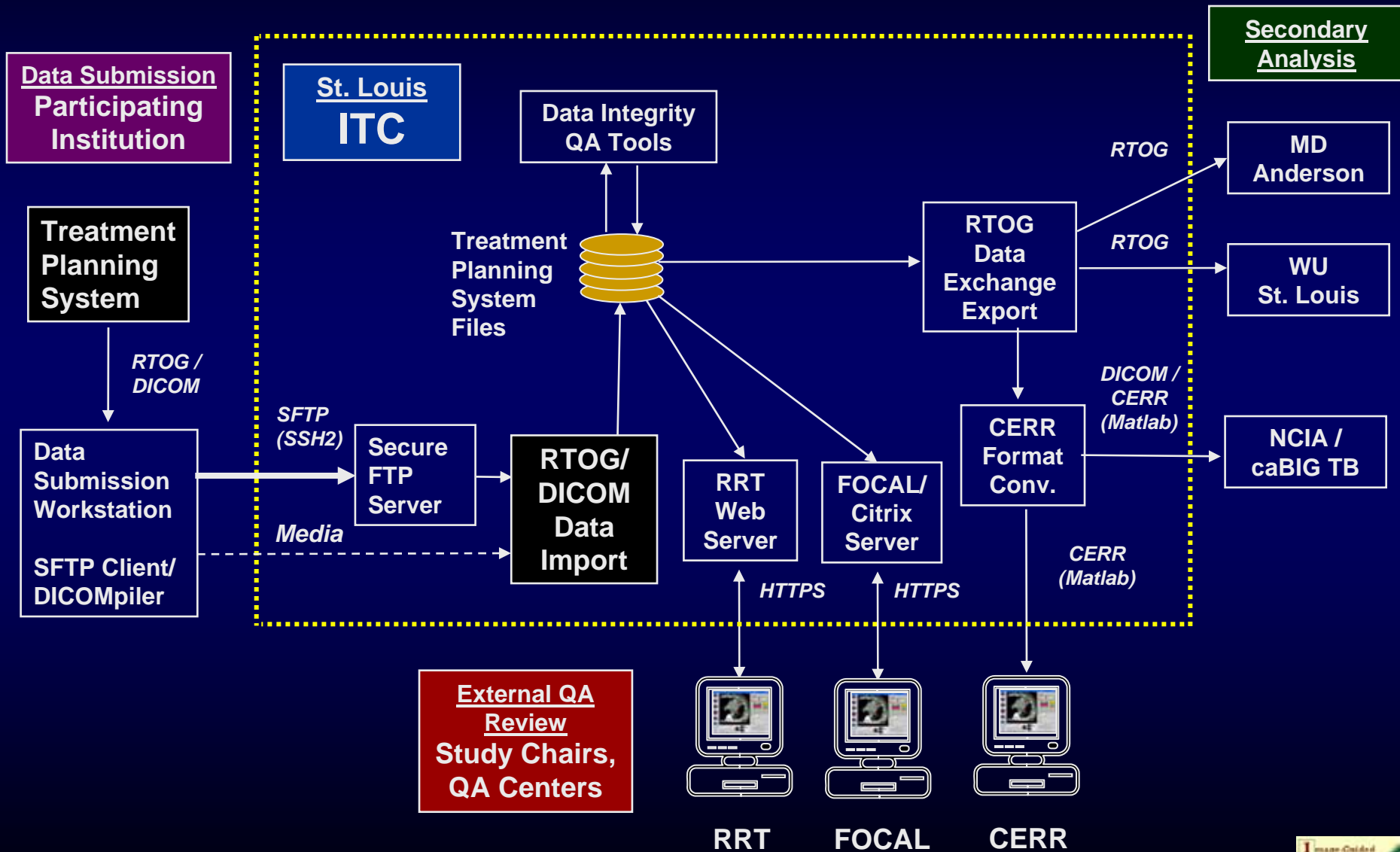


# Development of schedule for QuASAR (Quality Assurance Submission, Archive, and Review) System: Updates and Expansion

ATC Meeting  
August 1, 2007  
QARC, Providence, RI

# QuASAR – Current Components and Data Flow



# QuASAR – *Data Representation*

- RTOG Data Exchange (legacy)
  - Usage expected to decline as new TPS (e.g., Pinnacle, XiO) versions are installed
  - Continuing presence in “niche” applications (e.g., Brachy Seed Plans)
- DICOM RT Objects
  - Nearly 50% of submissions now use DICOM
  - IHE-RO Initiative (DICOM interoperability) is expected to improve uniformity of TPS DICOM exports over time.
  - DICOM WG-7 is currently developing next-generation DICOM RT Objects

Treatment  
Planning &  
Verification



Outcomes  
Analysis

# QuASAR – *Plans for Expansion*

1. DICOM-based RT Archive
2. Digital Data Integrity QA Workflow Tools
3. Thin client review tools – data remains on server
4. Thick client review tools – data downloaded to client
5. caBIG® Integration – caGrid Middleware

# QuASAR – *Developmental Tasks, Preliminary Timeline*

Aug 2007 -

Dec 2007 Teramedica Evercore installation

- Storage Hardware (SAN / NAS)
- Server (Dell PowerEdge)
- OS? (Linux / Win)
- DBMS? (SQLServer / PostgreSQL / MySQL)

Jan 2008 -

Dec 2008 Data Integrity QA Workflow Tools

- Data anonymization / ID reconciliation
- Archive loading
- Case data management (inventory, revision)
- DICOM consistency checks (DVTk)
- Structure naming / Structure editing/ Dose summation?
- RTOG/DICOM/CERR format conversion

# QuASAR – *Developmental Tasks, Preliminary Timeline (2)*

Jun 2008 -

## Server-Side Review Tools

- Multi-planar (T/S/C) RRT for contour and dose review
- Web-based diagnostic image review
- Image Digest / QA Report Generator (WebTrev)

Jan 2008 -

## Client-Side Review Tools

- Data download (web, caGrid)
- CERR
- Commercial TPS
- eXensible Image Platform
- Monte Carlo, data analysis/data mining

# QuASAR – *Developmental Tasks, Preliminary Timeline (3)*

Jun 2007 -

## caBIG® Integration – caGrid Middleware

- Data submission
- Archive data retrieval
  - caGrid-enabled CERR
  - eXtensible Imaging Platform
- Data replication among QA centers