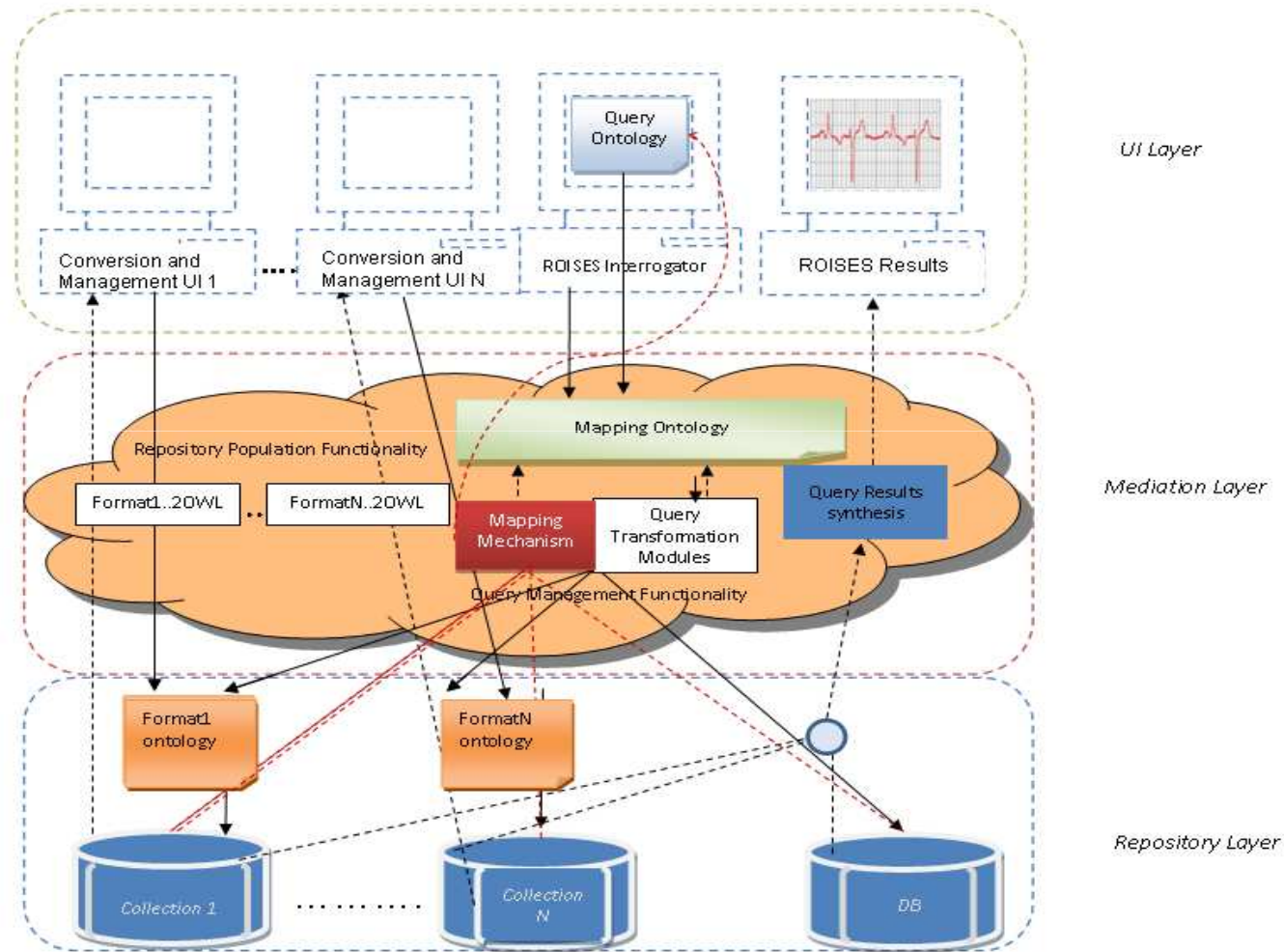
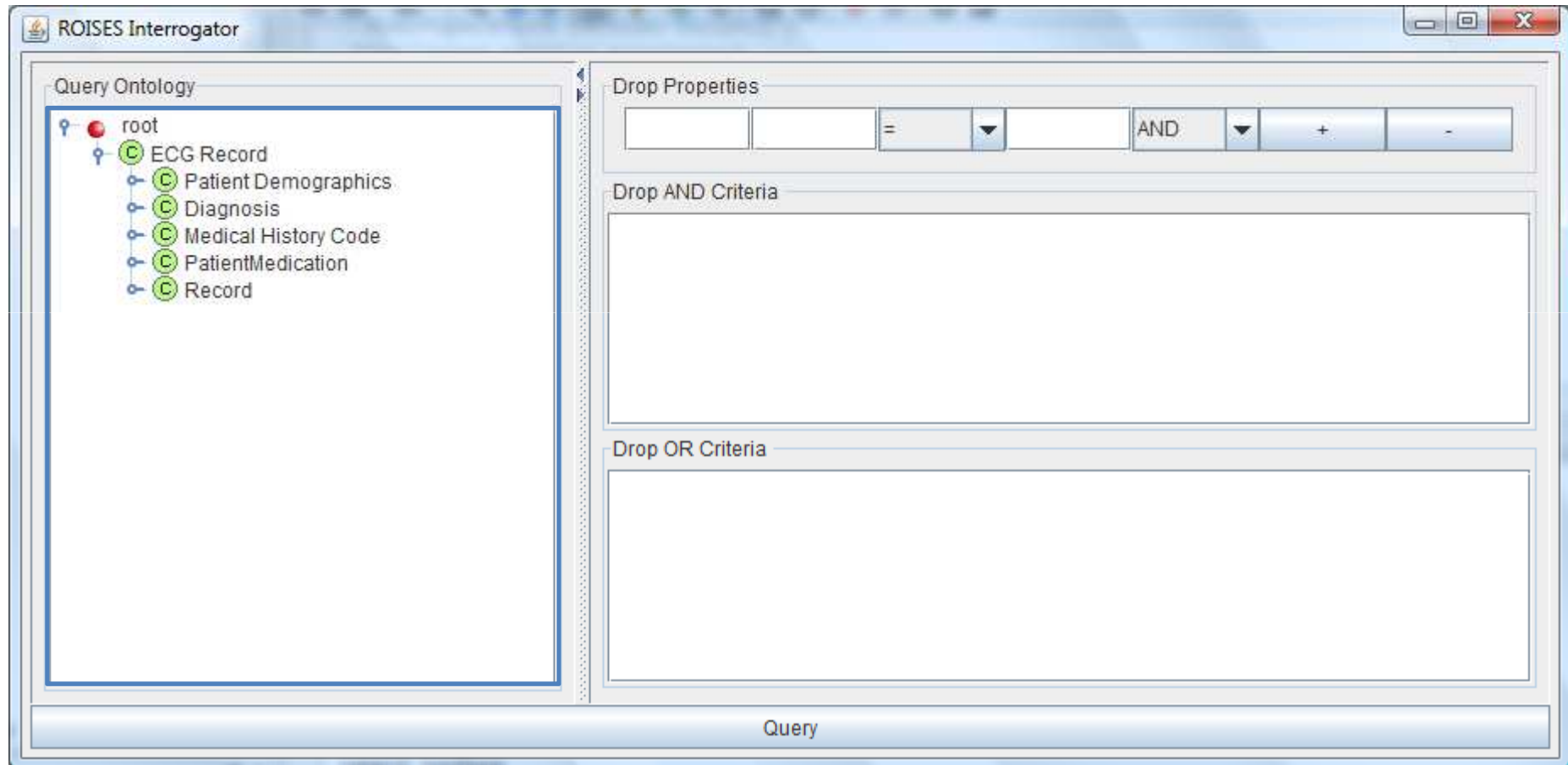


# ROISES Architecture



# ROISES Interrogator



Query example: select ECGs with Diagnosis= Myocardial Infarction and Drugs= Amiodarone or Captopril

The screenshot displays the ROISES Interrogator interface. On the left, a 'Query Ontology' tree is shown with a hierarchical structure of medical concepts. The 'PatientMedication' node is expanded, showing sub-nodes like 'Drug but unknown type', 'Manufacturer specific codes', 'Not taking drugs', 'Other medication', and 'Pharmaceutical\_OR\_Biologic\_product'. The 'Pharmaceutical\_OR\_Biologic\_product' node is further expanded to show 'Cardiovascular\_Drug', which includes 'Anti-Arrhythmia\_agents', 'Antianginal', 'Anticholesterol', 'Antihypertensive\_agents', 'Antihypotensive', 'AntithromboticAgents', 'Calcium\_channel\_blockers', 'Cardiac\_drug', 'Diuretics\_', 'Hypotensive\_agent', and 'Angiotensin-Converting\_Enzyme\_Inhibitors'. The 'Captopril' node is selected under 'Angiotensin-Converting\_Enzyme\_Inhibitors'.

On the right side, there are three panels for defining query criteria:

- Drop Properties:** A table with two rows. Each row contains an empty input field, an equals sign (=), a dropdown arrow, another empty input field, and an 'AND' operator. To the right of each row are '+' and '-' buttons.
- Drop AND Criteria:** A text area containing the text 'myocardial\_infarction'.
- Drop OR Criteria:** A list box containing 'Captopril' and 'Amiodarone', with 'Amiodarone' currently selected.

At the bottom of the window, a 'Query' button is visible.

# Query results

The screenshot displays the ROISES Results application interface. On the left, a file list shows several ECG files: PD2010.scp, e0115.edf, e0113.edf, PF2078.scp, and e0122.edf. The main window, titled 'SCP-ECG V/W', shows a 12-lead ECG with leads I, II, V4, V2, V3, V4, V5, and V6. A 'DIAGNOSIS' dialog box is overlaid on the ECG, containing a table of drugs, a list of history diagnoses, and a free text input field.

**DRUGS**

DrugClassCode	DrugCode	DrugText
Antirhythmic	Amiodarone	
Diuretics	Thiazide	
Unspecified	Unspecified	

**DIAGNOSIS**

HISTORY DIAGNOSIS

- Diagnoses or clinical problems not specified
- Apparently healthy
- Acute myocardial infarction
- Myocardial infarction
- Previous myocardial infarction
- Ischemic heart disease
- Peripheral vascular disease
- Cyanotic congenital heart disease

FREE TEXT

Ok Cancel

ROISES Results

# Conclusion

- ROISES framework
  - Biosignal: ECG
  - Data formats: SCP, EDF
  - Data structures: RDB, ontologies
- DTEM supports the extensibility of ROISES dually:
  - continually enriching its terminology.
  - updating and encompassing new data sources in the system,
    - adds to the variability of query criteria



**Integrated  
research**