

**MIRC**

**Medical Imaging  
Resource Center**

# MIRC Objective

Support the production, storage, indexing and distribution of medical imaging resources:

- **Teaching files**
- **Scientific & technical documentation**
- **Research images & datasets**
- **Clinical trials data**

# MIRC Concepts

The key concepts:

- **MIRC** is a community of cooperating libraries on the Internet.
- The **libraries** cooperate by supporting a common query mechanism.
- The **query** mechanism allows users to find information wherever it is stored.
- MIRC supports **all** information storage formats.

# MIRC Components

- **Query Service**

An entry point into the MIRC community for a user on the Internet.

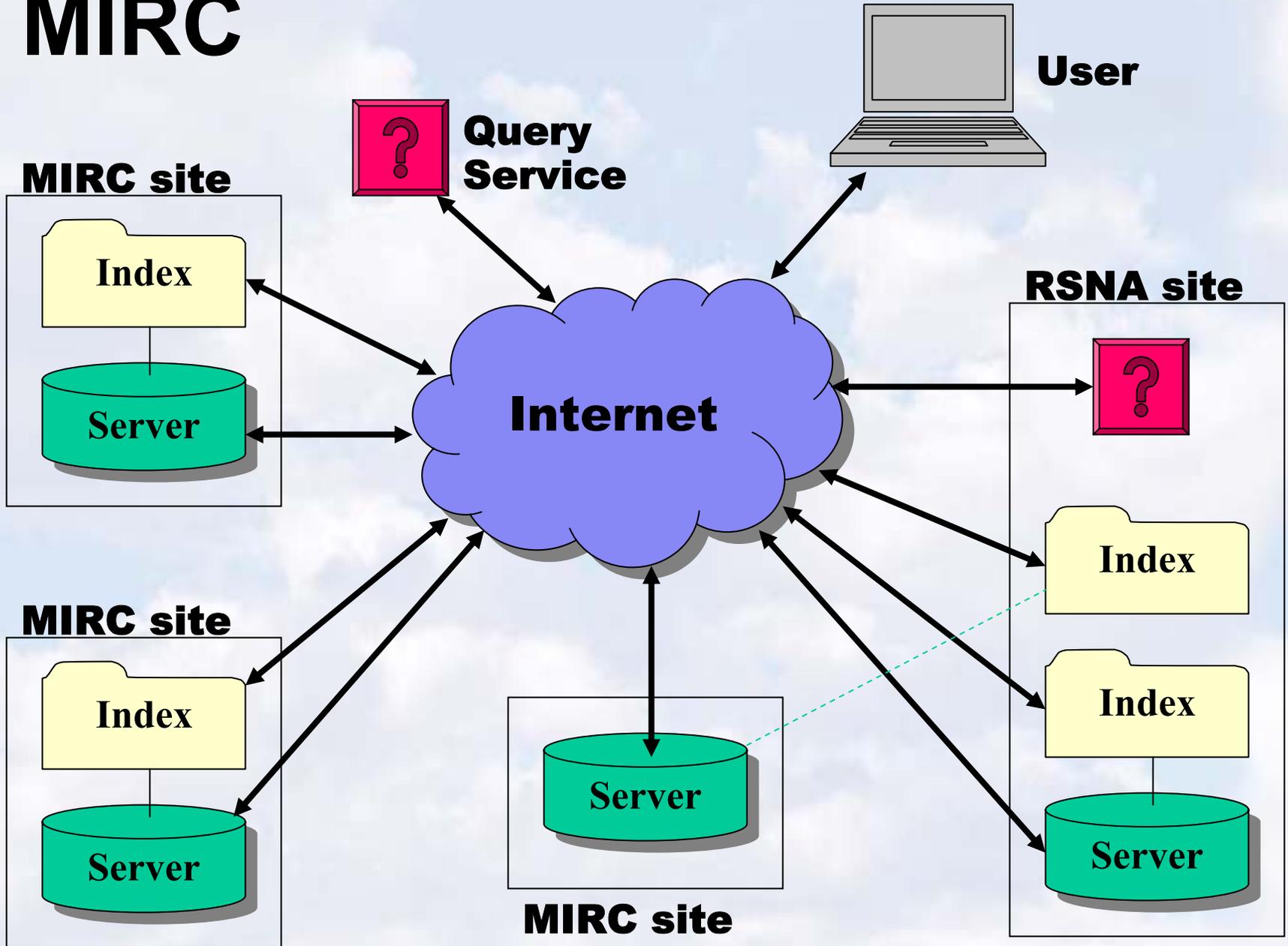
- **Storage Service**

A cooperating information library.

- **Index:** the library's card catalog.

- **Server:** the library's shelves.

# MIRC



# Implementation

- **MIRCquery Schema**
  - XML schema for sending a query from a Query Service to Storage Service Indexes.
- **MIRCqueryresult Schema**
  - XML schema for sending a response from a Storage Service Index to a Query Service.

# MIRC Concepts

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# MIRCquery Schema

**TITLE, AUTHOR, ABSTRACT, KEYWORDS**

**PATIENT:**

**AGE, SEX, RACE, DESCRIPTION**

**IMAGE:**

**FORMAT, COMPRESSION, MODALITY,  
ANATOMIC LOCATION**

**DIAGNOSIS: TEXT, VERIFICATION**

**CODE: NAME, VALUE**

**DOCDESC: TYPE, ACCESS, LEVEL, ...**

**FREE TEXT**

# MIRCqueryresult Schema

**MIRCqueryresult**

**MIRCdocument** - one for each match

**TITLE**

**AUTHOR**

**ABSTRACT**

**KEYWORDS**

**DOCDESC**

**Additional MIRCdocuments as required**

# The RSNA MIRC Site

- **Microsoft W2K / XP – pro**
- **ASP / Javascript**
- **XML / XSL**
- **XPath rather than relational database**
- **Software & installation/configuration documentation on the RSNA MIRC site**

# MIRCdocument Schema

- **XML schema for all indexed documents on sites using the RSNA MIRC site implementation**
- **Self-indexing – each document serves as its own index card**
- **Each document in another format is referenced by a MIRCdocument index card.**

# MIRCdocument Schema

**TITLE , AUTHOR , ABSTRACT , KEYWORDS**

**SECTION**

**PATIENT**

**IMAGE**

**DIAGNOSIS**

**CODE**

**RESOURCE**

**PUBLICATION**

**DOCDESC**

# RSNA Submission Concept

- **Vendors** implement the ability to provide images to authors' computers.
- An **authoring tool** supports editing text, converting, anonymizing and inserting images and other objects, grouping the data, and sending it to the RSNA site.
- The **RSNA site** automatically receives the data and quarantines it for the site manager.

# MIRC Authoring Tool

- 100% pure Java 2 version 1.4
- Specific to the MIRCdocument schema
- Supports DICOM, JPEG, PNG image formats
- Sources, executable, and documentation on the RSNA MIRC site

The RSNA MIRC Server - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit

Address <http://mirc.rsna.org/> Go Links Best of the Web Channel Guide



# RSNA Link

Radiological Society of North America, Inc.  
Founded in 1915

## MIRC Query

The RSNA MIRC Site

- Development MIRC Site
- UCSF MIRC Storage Service
- Mallinckrodt MIRC Storage Service

Free Text Query:

Author:

Abstract:

Keywords:

Patient Parameters:

Gender:   Age (min [-max]):  Units:

Image Parameters:

Modality:  Anatomic Location:

Image Format:  Image Compression:

Done Internet

MIRC Query Results - Microsoft Internet Explorer

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## MIRC Query Results

### The RSNA MIRC Site

1. [MIRC Documentation Index](#)  
John Perry  
This document provides an index to all the MIRC technical documentation.

Internet

MIRC document - Microsoft Internet Explorer

File Edit View Favorites Tools Help

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Address [IRCdocuments/mircpapers/mircdocumentationindex.xml](#) Go Links [Best of the Web](#) [Channel Guide](#)

## MIRC Documentation Index

**John Perry**  
Radiological Society of North America  
[jperry@interaccess.com](mailto:jperry@interaccess.com)

### Abstract

This document provides an index to all the MIRC technical documentation.

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### Keywords

MIRC technical documentation

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### MIRC Technical Overview Presentation

This document contains the [presentation](#) of the technical structure of the MIRC community given at the RSNA 2001 conference. It provides a high-level context for understanding MIRC Query Services, MIRC Storage Services, and the ways that data are indexed and distributed through the community.

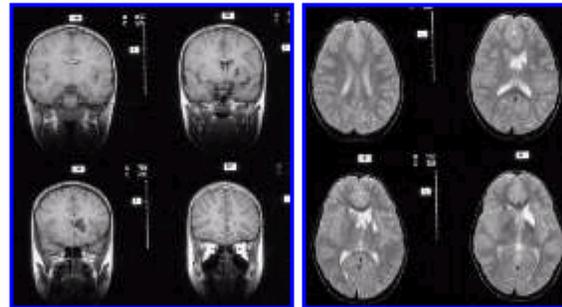
Done Internet

On physical examination, she was responsive, fully oriented and had intact mental functions. She had no fever and the neck was supple. Blood pressure was normal. Neurologic examination revealed the right hemiplegia as well as a left central facial palsy.

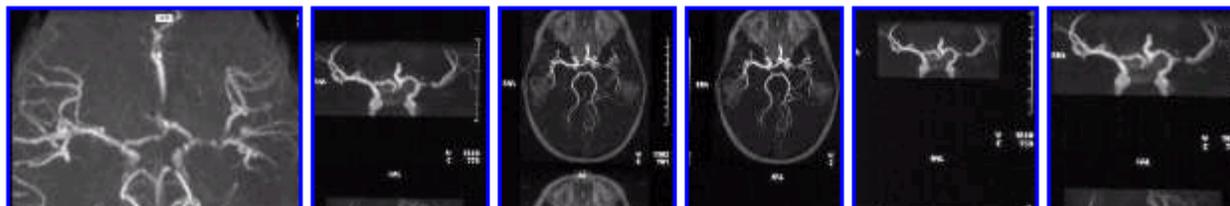
Findings from hematology, blood chemistry and urinalysis were normal. ECG and echocardiography did not show any abnormality.

A cranial CT, performed about 12 hours after the first clinical symptoms, demonstrated a subtle hypodensity in the left basal ganglia.

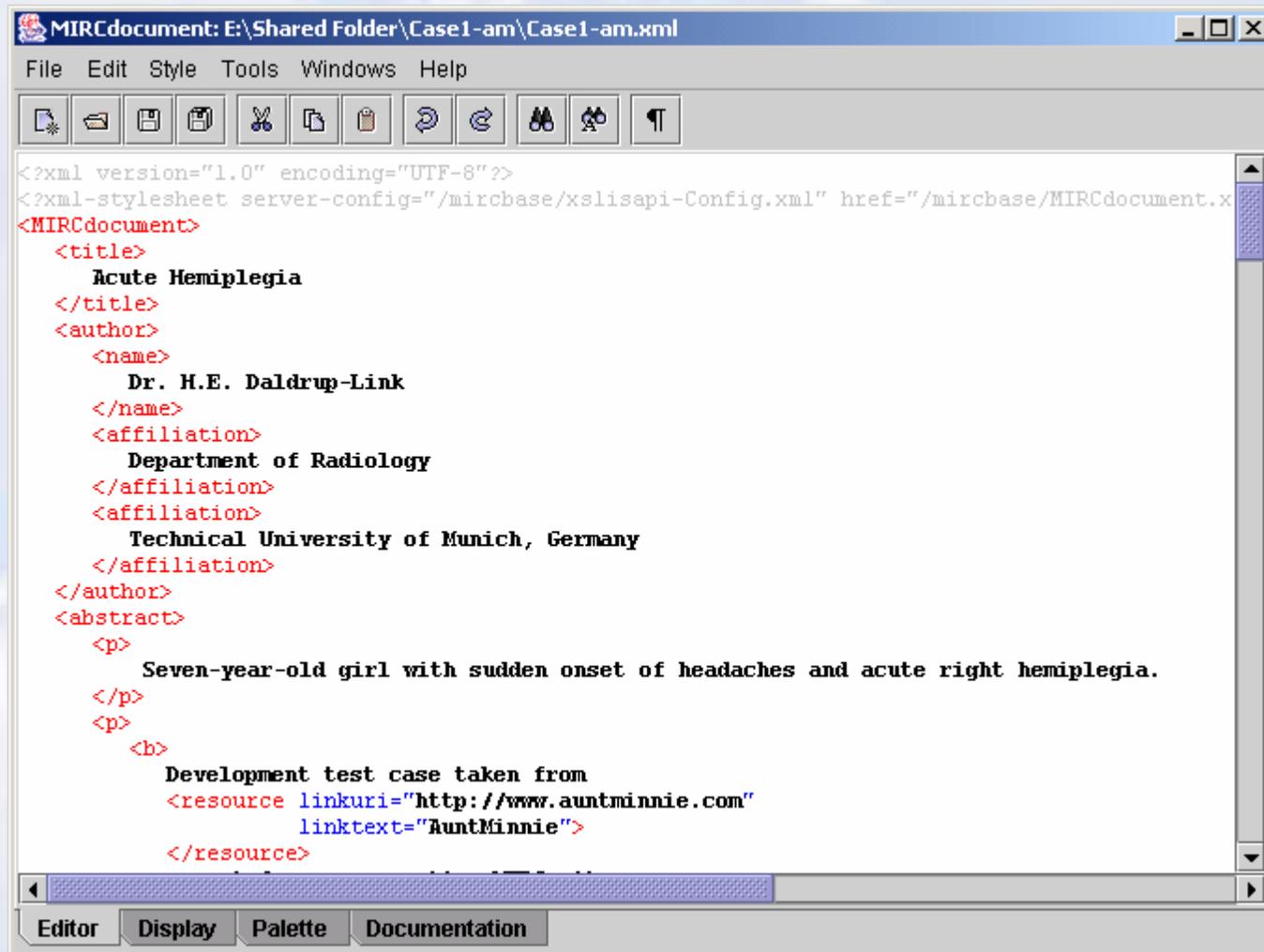
Selected images from a follow-up MRI are shown below. Image left is a collage of T1W coronals. Image right is a collage of T2W axials. Click to enlarge.



MR angiography was also performed. Selected images shown. Click to enlarge.



# MIRCat



```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet server-config="/mircbase/xslisapi-Config.xml" href="/mircbase/MIRCdocument.x
<MIRCdocument>
  <title>
    Acute Hemiplegia
  </title>
  <author>
    <name>
      Dr. H.E. Daldrop-Link
    </name>
    <affiliation>
      Department of Radiology
    </affiliation>
    <affiliation>
      Technical University of Munich, Germany
    </affiliation>
  </author>
  <abstract>
    <p>
      Seven-year-old girl with sudden onset of headaches and acute right hemiplegia.
    </p>
    <p>
      <b>
        Development test case taken from
        <resource linkuri="http://www.auntminnie.com"
          linktext="AuntMinnie">
        </resource>
      </b>
    </p>
  </abstract>
</MIRCdocument>
```

# MIRCat

The screenshot shows a window titled "MIRCdocument: E:\Shared Folder\Case1-am\Case1-am.xml". The window has a menu bar with "File", "Edit", "Style", "Tools", "Windows", and "Help". Below the menu bar is a toolbar with various icons for editing and navigation. The main content area displays the following text:

**Acute Hemiplegia**

Dr. H.E. Daldrup-Link  
Department of Radiology  
Technical University of Munich, Germany

**Abstract**

Seven-year-old girl with sudden onset of headaches and acute right hemiplegia.

Development test case taken from [AuntMinnie](#) - not for use on active MIRC sites.

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**Keywords**

acute hemiplegia pediatric headache headaches

At the bottom of the window, there are four tabs: "Editor", "Display", "Palette", and "Documentation".

# MIRCat

