

Agent-based Session Information Announcement System

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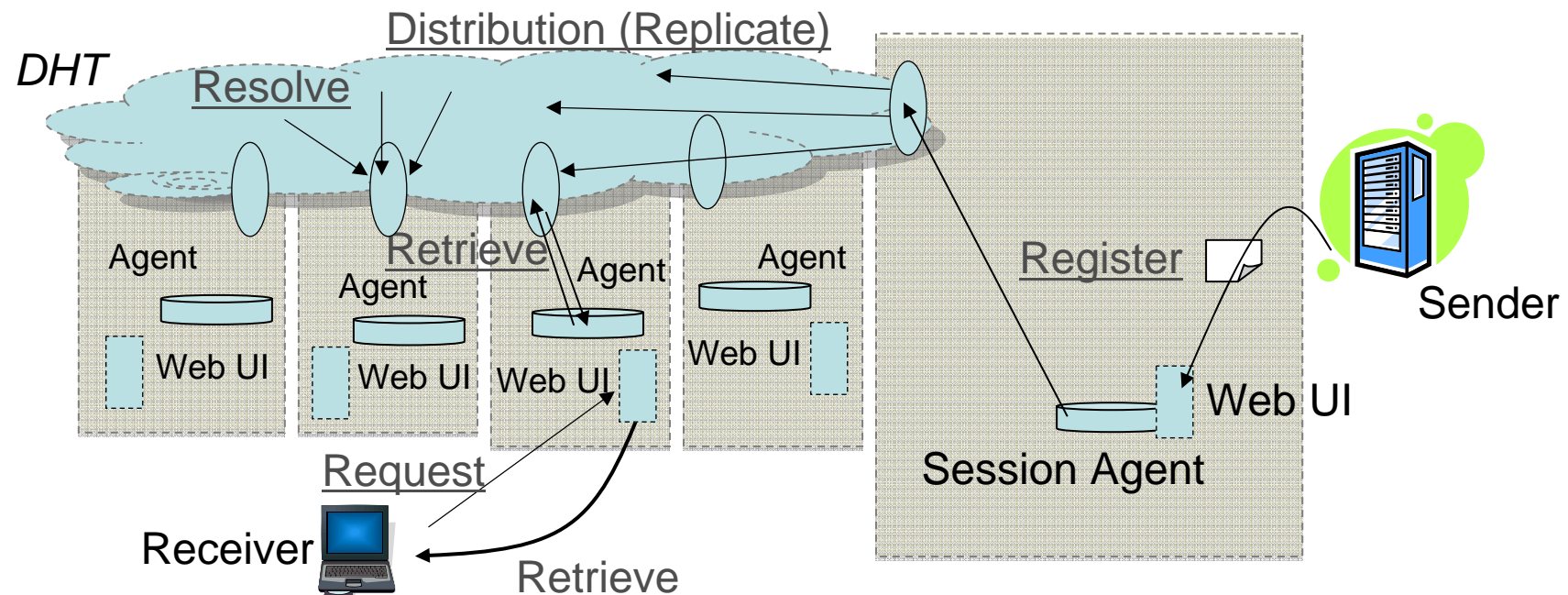
*This work is partly supported by National Institute of Information
and Communications Technology (NICT), Japan.*

Overview

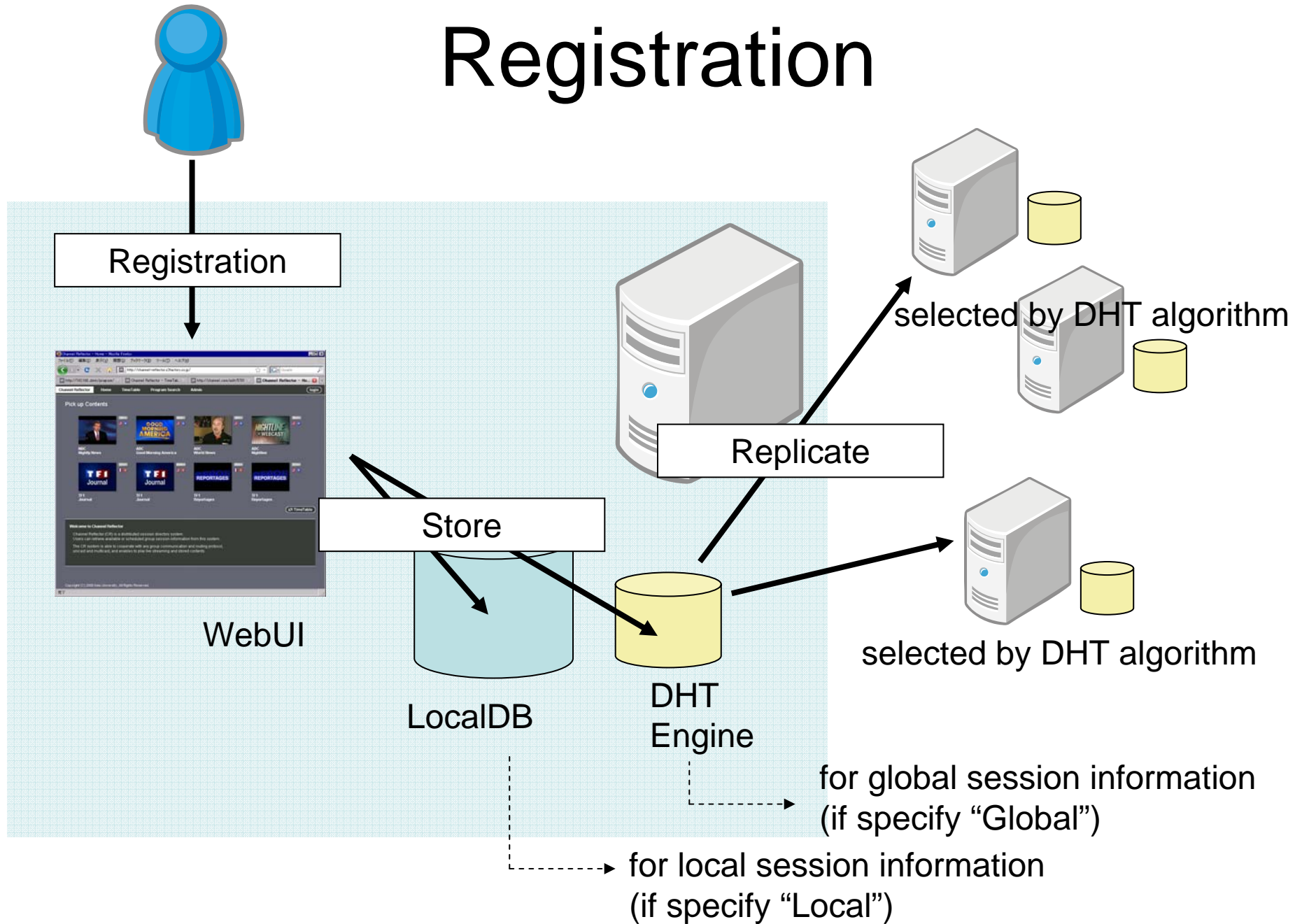
- Implementation and demonstration of agent-based session information announcement system (aka Channel Reflector)
- Features and components
 - Multiple agents
 - DHT and local DB (MySQL)
 - Web-based interface
 - Apache + Perl + Catalyst + Ajax
 - SDP-based session description

Data distribution with DHT

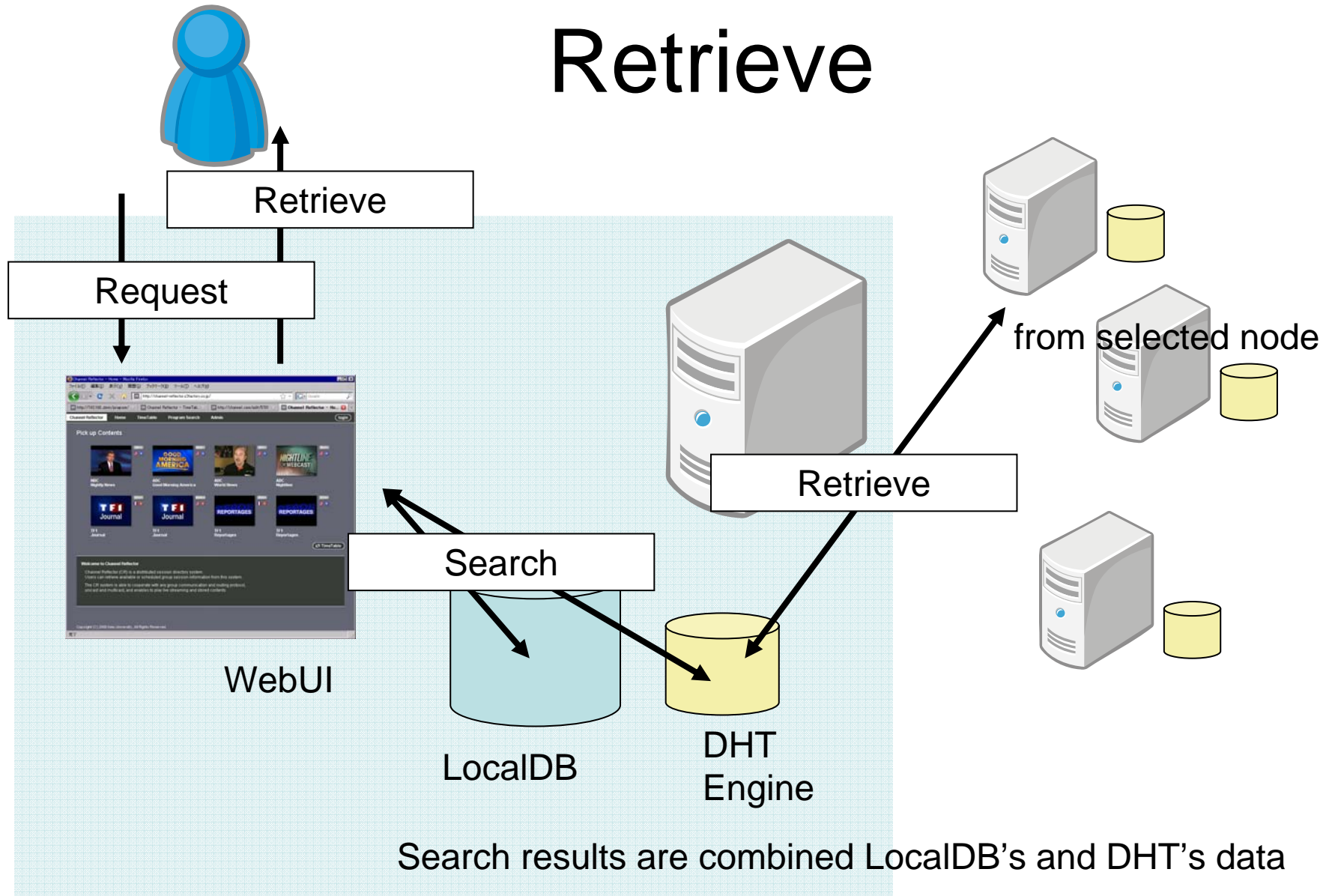
- Scalable, low registration and retrieve latency
- Manage a large number of session information (e.g. > 1 million)
- Content control
 - Site-local session, global session
- Access control (partially future work)
 - User management, IP address range (prefix level) filtering



Registration



Retrieve



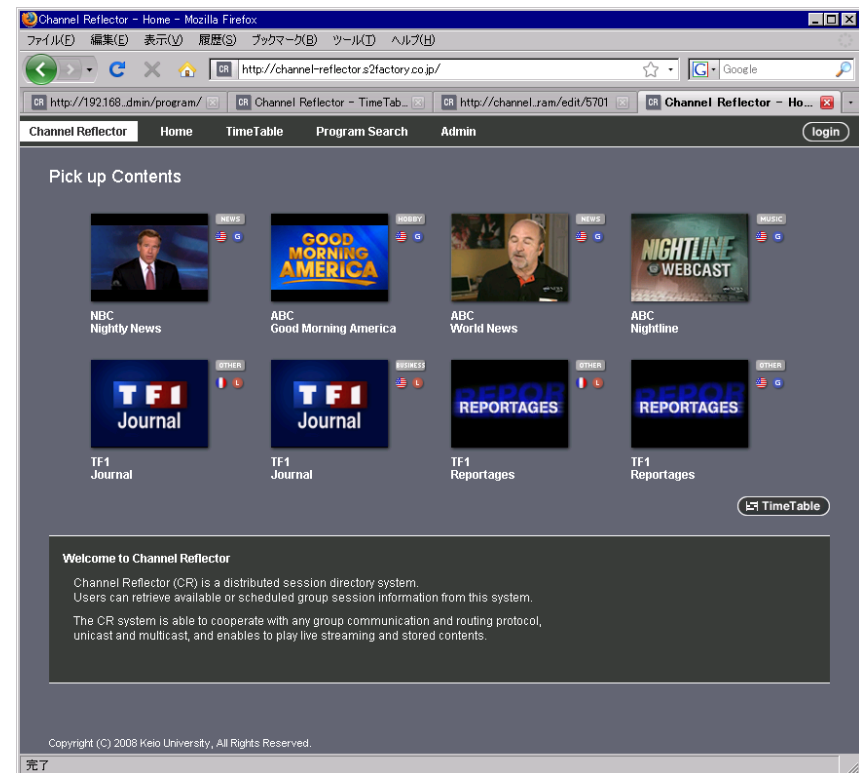
Implementation

- Required Component
 - Apache
 - MySQL
 - Perl + Catalyst runtime
- Required OS / Kernel
 - CentOS5 / RHEL5 (need to install yum)
 - Linux 2.6.18

Demo

- URL: <http://demo.channel-reflector.net/>
 - You can try to register and search in this URL

- WebUI
 - Home
 - Timetable
 - Search
 - Program Launch
 - Admin



Home (INDEX)

- Picked up contents are shown

click thumbnail,
and launch player

Channel Reflector Home - Mozilla Firefox

ファイル(E) 編集(E) 表示(V) 履歴(S) ブックマーク(B) ツール(T) ヘルプ(H)

CR http://demo.channel-reflector.net/index.html

CR Channel Reflector... http://dev.../program/ phpMyAdmin CR http://cha.../edit/5701 CR Channel Reflector - ...

Channel Reflector Home TimeTable Program Search Admin login

Pickup Contents

click show information

click thumbnail, and launch player

Keio University Colors of Japan

Keio University Colors of Japan Foods

OTHER

10 Oct 2008, 0:00 - 480:00

Colors of Japan

TimeTable

Welcome to Channel Reflector

Channel Reflector (CR) is a distributed session directory system.
Users can retrieve available or scheduled group session information from this system.

The CR system is able to cooperate with any group communication and routing protocol, unicast and multicast, and enables to play live streaming and stored contents.

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完了

Timetable

Channel Reflector - TimeTable - 10 Oct 2008 - Mozilla Firefox

ファイル(E) 編集(E) 表示(V) 履歴(S) ブックマーク(B) ツール(T) ヘルプ(H)

http://demo.channel-reflector.net/timetable.html?date=1223564400000

Channel Reflector Home Time Table Program Search Admin login

Time Table 10 Oct 2008 another date

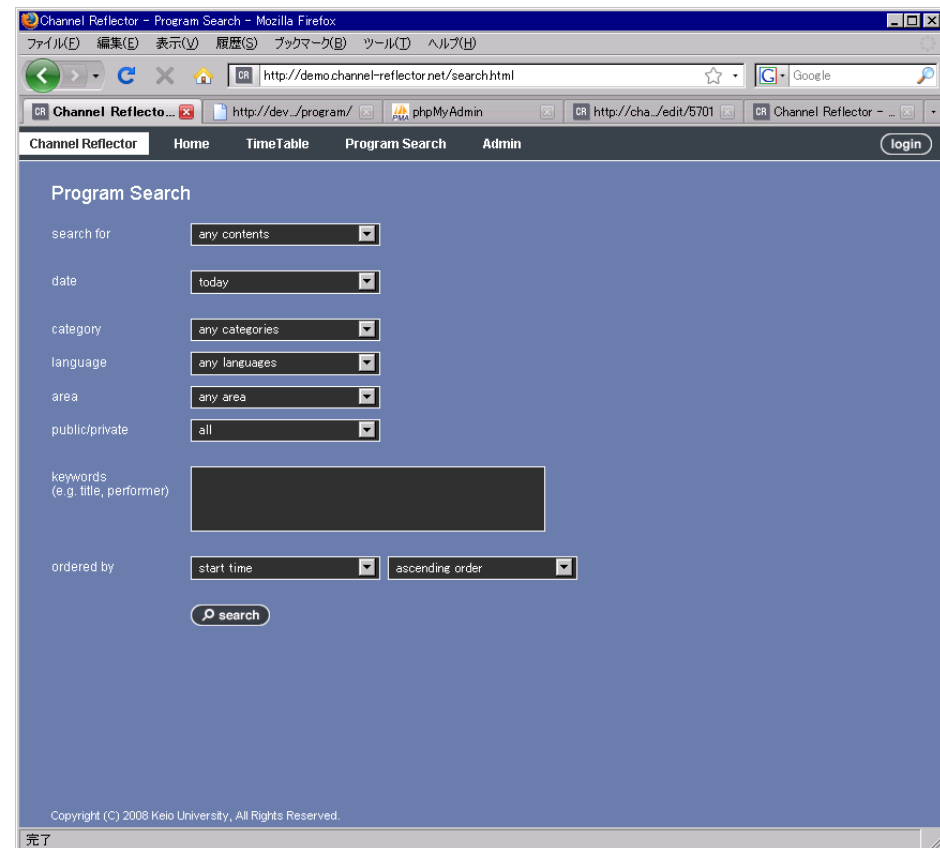
	0:00	1:00	2:00	3:00
Keio University	Colors of Japan			

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完了

Program Search

- [Program Search]
- Search Form
 - Contents type
 - Date/Time
 - Category
 - Language
 - Keywords ...



The screenshot shows a web browser window titled "Channel Reflector - Program Search - Mozilla Firefox". The address bar displays "http://demo.channel-reflector.net/search.html". The page features a navigation menu with "Channel Reflector", "Home", "TimeTable", "Program Search", and "Admin", along with a "login" button. The main content area is titled "Program Search" and contains several search filters: "search for" (set to "any contents"), "date" (set to "today"), "category" (set to "any categories"), "language" (set to "any languages"), "area" (set to "any area"), and "public/private" (set to "all"). There is a text input field for "keywords (e.g. title, performer)" and two dropdown menus for "ordered by" (set to "start time") and "ascending order" (set to "ascending order"). A "search" button is located at the bottom of the form. The footer of the page includes the text "Copyright (C) 2008 Keio University, All Rights Reserved." and a small "完了" (End) icon in the bottom right corner.

Search Result

- Tile View
 - Thumbnail
 - Launch player same way as Home



Search Result

- List View

The screenshot shows a web browser window displaying the Channel Reflector interface. The browser's address bar shows the URL: <http://demo.channel-reflector.net/listview.html?start=1223650800000&end=1226>. The page title is "Channel Reflector - Program Search Results - 2 contents". The navigation menu includes "Channel Reflector", "Home", "TimeTable", "Program Search", and "Admin", with a "login" button on the right. The main content area is titled "Program Search Results - 2 contents" and features a "Tile View" button and a search input field. Two search results are listed:

STATUS	UNIVERSITY	PROGRAM	OTHER	DATE	DURATION	DESCRIPTION
STORED	Keio University	Colors of Japan	DOCUMENT		0h 30min	Colors of Japan
ONLINE	Keio University	Colors of Japan Foods	OTHER	10 Oct 2008	0:00 - 480:00	Colors of Japan

A detailed view of the second result is shown in a modal window:

- Thumbnail:** A red circle with a white crescent and a star, labeled "Colors of JAPAN" and "ONLINE".
- Title:** Keio University Colors of Japan Foods
- Category:** OTHER
- Date:** 10 Oct 2008, 0:00 - 480:00
- Description:** Colors of Japan

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完了

Program Register

- [Admin] -> [Add New Content]
- Contents Information
 - Title
 - Date-time
 - Thumbnail Image ...
- Location Information
 - URI (metafile)
 - {S,G}
 - MIME type ...

The screenshot shows a Mozilla Firefox browser window with the address bar displaying `http://demochannel-reflector.net/Admin/program/edit/0`. The page content is in Japanese and includes the following form elements:

- Admin Top** (button)
- コンテンツ情報** (Content Information)
 - コンテンツID (Content ID): [input field]
 - コンテンツ名 (Content Name): [input field]
 - 詳細情報 (Detailed Information): [input field]
 - サブタイトル (Subtitle): [input field]
 - カテゴリ (Category): [dropdown menu, currently 'other']
 - タイプ (Type): stored realtime
 - 開始時間 (Start Time): [input field, value: 2008-10-14 00:00:00]
 - 終了時間 (End Time): [input field, value: 2008-10-14 00:00:00]
 - 言語 (Language): [input field]
 - サムネイル画像 (Thumbnail Image): [input field]
- Update: [input field] [参照...] (Reference...)
- 配信者** (Distributor): [input field]
- 範囲 (Scope): local global
- public: true false

The status bar at the bottom left shows the text '完了' (Completed).

Future Work

- Access control
 - User access, site-local control, content access
- More search function
 - Keyword search, search by date and time
- Handle personal taste with login function
 - Personal home page (with preferred category and language), time zone, etc.

Release Schedule

- After this meeting
 - Experimental test started on our server
 - Web-based system
 - No DHT, no agent, no access/content control, only for global session announcement
- Mid. of Jan. 2009
 - Beta-version package released
 - Web package + agent+ brand-new DHT (pastry base) implementation
- Apr. 2009 (Next I2MM)
 - Official release
 - New installation package released
 - New functions
 - Access control incl. user management (login function)

Call for Participation

- Feel free to access our server and register your global session information
- We appreciate you to participate in a beta test
 - Set up one server on your site
 - Agent, DHT node, web UI
 - A large number of participations will make good data replication and increase the robustness
- If you have comments...
- If you are interested in joining the test...
- Please contact to...
 - Kazuhiro Mishima <three@sfc.wide.ad.jp>
 - Assoc. Prof. Hitoshi Asaeda <asaeda@sfc.wide.ad.jp>