NTT starts video delivery trial for
Paris-Contents Distribution Service: "iFrench"

- Preparing for the video distribution service era with technologies
such as ID watermarking of video contents -

NTT is starting a video delivery trial for its Paris-Contents distribution Service
"iFrench" on September 11 in which streaming video information about metropolitan
Paris is delivered regularly to users in Japan.

As symbolized by the progress in optical access, the environment is being constructed
where individual users can enjoy videos at any time in comfort via networks through
the medium-to-high-speed access lines.

NTT is proceeding to develop fundamental technologies for multimedia contents
distribution such as watermarking of video contents for copyright protection.

This video delivery trial aims to validate the convenience of the integrated video
distribution service and the marketability of the platform through multimedia contents
called "iFrench".

1. iFrench

iFrench is a multimedia content developed for this trial in cooperation with
MondoRondo S.A. (*1) in France, by gathering and editing on-site information about
metropolitan Paris in video format. Under the theme "the city and people of Paris",
iFrench shows the fascination of Paris from various aspects through web-based video,
and aims to be a broadband internet medium that relays metropolitan Paris to users in
Japan. It also provides the latest information from French television and the web,
reflecting current affairs in France.
The main programs are:

i-   **VIDEO**: The central program of iFrench. Information about Paris is offered in a
     variety of programs such as the joy of wine, video images of Paris, life at various
     schools, and French language lessons. All are organized from locally taped
     videos.
ii- **NEWS**: Topics of the week are selected from France Television 1 (TF1) news and
     offered in video format.
iii- **COMMERCE**: Selected French Internet shopping sites are introduced weekly
     where users in Japan can order French goods.
iv- **WEB**: New Web information is introduced from "the selection of the week" in
     YAHOO FRANCE.
v-   **CAFÉ**: Essays by Japanese residents in Paris

vi- **FORUM**: Forum open to users.

2. Technical Essentials

This trial will transmit the contents on servers in NTT Europe Paris Branch to mirror servers in Japan via the international leased line of the NTT Communications Corp.

The following technologies for video delivery, copyright protection, and billing are used:

2.1 Efficient video delivery using MDS ([*2](#)) mirroring
If many accesses concentrate on large-volume contents, located at a particular server, such as video, which consumes a lot of bandwidth, then user access will be slow or even be impossible. NTT has developed an advanced contents delivery technology called MDS for Mass Delivery System. MDS optimizes the whole access environment by intelligent mirroring to allow contents allocation that suits the user access distribution, rather than a simple mirroring for traffic diversity.

In this trial, MDS will replace a URL so that iFrench contents are delivered from the nearest MDS server to a particular user, even if the user accesses iFrench in Paris. When newly received contents are entered into the Paris-server, only the additional materials not on the server before are transmitted to Japan where they are mirrored on the MDS servers. This reduces backbone network traffic drastically and allows users to enjoy video regardless of congestion within a backbone network.

2.2 Watermarking to video contents
An information sharing society needs copyright protection. Although a technique for embedding digital watermarks in still images, such as JPEG, has already been developed, this trial is the first time the concept has been extensively applied to videos.

Digital watermarking embeds unnoticeable sub-information (watermarks) into digital contents to identify illegal use. It must not noticeably affect the digital contents (main-information), while surviving even if the main-information is edited and/or modified. Moreover, it should be impossible to delete or change without the main-information being affected.

Our video watermarking technology continuously embeds the content ID in a segment of high-frequency bandwidth in the compressed video data that has a high rate of redundancy. As a result, the embedded ID can be detected in any segment of the video frames.

2.3 Membership accounting methods
iFrench is a membership-based service where the membership fee appears on the user's telephone bill by means of NTT Communications' payment system "Calle([*3](#))."

It provides services for various types of members such as monthly members and members limited to specific product types, and matches the charging method to the contents being delivered through a mirror server.

iFrench does this by using distributed authentication, accounting, and payment independent from the contents flow, to allow free access to the contents within a specified range of products after the membership fee has been paid. As the

authentication and accounting systems can respond to mirror delivery of the video, traffic concentration can be avoided and users can get comfortable delivery of contents they have paid for without the frustration of delays and bottlenecks.

3. Outline of the Trial

3.1 Objectives:
To validate the effectiveness and the marketability of the integrated video distribution service platform using multimedia contents: "iFrench".

3.2 Period:
For six months from September 11, 2000.

3.3 Methods and Contents:
Concurrent with the start of this trial, we plan to make a segment of the iFrench contents openly available on the Internet for market research.
Targeting medium-to-high-speed internet users, iFrench will deliver videos optimized for various user access environments such as QuickTime at 64 kbps, MPEG1 at 768 kbps and MPEG2 at 2 Mbps.
By entering a simple profile as a member registration and obtaining user ID and password, the user will be able to access any contents in iFrench. Users are requested to evaluate the trial by answering a questionnaire after the access to iFrench.
Although the trial will be promoted with the objective of shifting to a paid service in the future provided by NTT's business sectors, access to the iFrench contents via the Internet will be free of charge during the trial period.
The URL of iFrench is:
 http://ifrench.ntt.fr

4. Future Plans

Based on the results of this trial, we will investigate which NTT business sector should be responsible for providing this service and will recommend a timeframe for starting the service, and then will make a service proposal to the business sector. Furthermore, through this trial, NTT intends to improve its information sharing platform.

5. Glossary

*1 MondoRondo S.A.
Established in 1995, Mondo Rondo is a creative web development studio based in Paris. Specializing in user interface, navigation, ergonomics and interactivity, it has initiated and developed a number of web/multimedia projects combining music and video.
Mondo Rondo seeks to become a leading web producer in France and abroad.
Major projects include: Mondomix (a world music portal), the National Audiovisual Institute's (INA) job exchange (the most succesful job site for the French digital industry), MDDF (Monaco Dance Danse Forum (Europe's leading international dance fair), Entrepotes.com (a community site) and Disney Interactive France.

*2 MDS: Mass Delivery System
Contents are copied onto distributed mirror servers beforehand. When a user requests contents, they are delivered from the nearest mirror server to the user without the user

being aware that a mirror server is being used.

Each mirror server can be used by several content providers as a common resource. Contents can be copied through directories, for example, contents of a certain type can be assigned to a directory based on expected demand in a region over a particular time frame.

*3 Calle
An electronic billing system where the charge for contents is added to the user's telephone bill, thus enabling convinient payment. The name is a combination of "call", as in telephone call, and "e", as in e-commerce.

- [Trial System Configuration of the Paris Contents Distribution Service: "iFrench"](#)

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