

## ViSiCAST Milestone M1-3: Interim Transmission Demonstration

<b>Project Number:</b>	IST-1999-10500
<b>Project Title:</b>	ViSiCAST Virtual Signing: Capture, Animation, Storage and Transmission
<b>Deliverable Type:</b>	Milestone /Internal documentation

<b>Deliverable Number:</b>	M1-3
<b>Contractual Date of Delivery:</b>	11/2000
<b>Actual Date of Delivery:</b>	12/2000 and 04/2001
<b>Title of Deliverables:</b>	Interim Transmission Demonstration

**Work-Package contributing to the Deliverable:** Workpackage 1

<b>Nature of the Deliverable:</b>	Report
<b>Author(s):</b>	W. Brückner

### Abstract of:

-“ViSiCAST Broadcast Demonstration -on December 21, 2000 and April 10, 2001”

The Interim Transmission Demonstrator (Deliverable D1-1) was accomplished in two steps:

On December 21, 2000 ViSiCAST motion data (compressed mask-vr data made available by the project partners Televirtual and UEA) were successfully transmitted on IRT's laboratory broadcast equipment, using between 5 and 25 frames of 430 bytes per second. That data were transmitted within the DVB Transport Stream in conjunction with other, independent MPEG-2 video streams. This proved the feasibility, in principle, of encompassing compressed mask-vr data within a DVB TS. The transmitted signal was modulated (ref. Attachment 1).

On April 10, 2001, the ViSiCAST motion data (compressed mask-vr data) were sent concurrently with a related MPEG-2 video stream, modulated with the help of an RF Modulator. Video and the signing avatar were displayed synchronously on a PC based receiver. This proved the successful transmission of avatar data for displaying sign language whilst applying a simple mechanism for synchronisation. This was witnessed by peer reviewer Mr. David Wood, Head of New Technology Dept., European Broadcasting Union (ref. Attachment 2). In addition, MPEG-4 compressed motion data for driving an MPEG-4 sign language avatar (made available by the project partner INT) was successfully transmitted and displayed using the same IRT equipment.



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### **ViSiCAST Broadcast Demo on December 21, 2000:**

This is to certify that ViSiCAST motion data (compressed mask-vr data) were transmitted successfully today on IRT's DVB-S laboratory broadcast equipment, using between 5 and 25 frames of 430 bytes per second, independently from any MPEG-2 video stream.

The data were inserted as MPEG-2 private section data with assistance of a IRT software running on WINDOWS 98 and using a Thomson MPEG encoder. The data were decoded using an of-the-shelf DVB-Hauppauge TV-receiver card mounted in a usual WINDOWS 98 platform PC. These data were extracted from the MPEG-2 transport stream with the help of a further IRT software and passed to the Visia browser which displayed the sign language movements.

Note 1: With this technique, synchronisation between the MPEG-2 video signal and the ViSiCAST motion data is predicted to be typically in the order of one or two seconds. Further work should concentrate on more precise and device-independent synchronisation techniques by standard MPEG-2 mechanisms.

Note 2: The compressed ViSiCAST motion data and the Visia browser were made available by Televirtual.

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Werner Brückner, Project co-ordinator

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Christoph Dosch, Head of collaborative research

Made in Germany

Project Number:	IST-1999-10500
Project Title:	ViSiCAST Virtual Signing: Capture, Animation, Storage and Transmission
Document Type:	Peer Review
Deliverable Number:	D1-1
Title of Deliverable:	Demonstrator
Work-Package contributing to the Deliverable:	Workpackage 1
Peer Review Author(s):	Mr. David Wood, EBU

Qualifications and Expertise as Peer Reviewer: *Reviewer is Head of New Technology for the European Broadcasting Union and has extensive experience and knowledge of digital broadcasting and multimedia.*

<input checked="" type="checkbox"/>	I have read the report of the Deliverable.
<input checked="" type="checkbox"/>	I have read the Workpackage Description relating to the Deliverable.

## Rating of the report as a whole:

1	2	3	4	5	Poor = 1, Excellent = 5
				✓	Overall quality
				✓	Reflecting the state-of-the-art
				✓	Meeting the objectives of the Workpackage
				✓	Meeting a real need
				✓	Contributing to this field
			✓		Style and clarity of the report

General Comments on Deliverable: *The system demonstrator for low-bandwidth transmission to accompany broadcast TV, based on captured motion parameters, has been developed and shown to work.*

Comments on Contribution to objectives of Workpackage and ViSiCAST project: *The demonstration was an effective and adequate indication of the potential of the system, and a springboard to the further development of non-DTP systems.*

Signed: <i>D. Wood</i>	Date: <i>10. April 2001</i>
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