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IST R&D. FP6-Priority 2.
SPECIFIC TARGETED RESEARCH PROJECT
Project Deliverable

SUIT Doc Number	SUIT_518
Project Number	IST-4-028042
Project Acronym+Title	SUIT- Scalable, Ultra-fast and Interoperable Interactive Television
Deliverable Nature	Report
Deliverable Number	D0.5
Contractual Delivery Date	April 30th, 2008
Actual Delivery Date	April 11th, 2008
Title of Deliverable	D0.5_Project_Interim_Progress_Report PMR- Project Management Report
Contributing Workpackage	WP0
Project Starting Date; Duration	01/02/2006; 27 months
Dissemination Level	CO
Project Coordinator Name	Antonio Navarro
Project Coordinator Organisation Name	Instituto de Telecomunicações (IT)
Period covered	1st Feb 2007- 30th Apr 2008
Revision	04

Abstract

This document is the Periodic Management Report (PMR) which consolidates the claimed costs of all the contractors in an aggregate form covering the second reporting period (Feb 2007 - April 2008), and from Section 1.12, it also covers the entire duration of the project SUIT (Feb 2006 - April 2008). The PMR is submitted for each reporting period as defined by article II.7.4.b of the contract. It is based on relevant information from Annex I of the contract.

Keyword list: Annual Human Resource Allocation, Work description, Major Cost Items, Overview Budget and Actual Costs, Major Deviations.

Periodic Management Report

D0.4_Project_Interim_Progress_Report

SUIT_518

April, 11th 2008

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	SUIT- Scalable, Ultra-fast and Interoperable Interactive Television
	http://suit.av.it.pt

Participants		**Short Name**	**Country**
	Instituto de Telecomunicações.	*IT*	Portugal
	IBBT-Interdisciplinair instituut voor BreedBand Technologie Vzw	*IBBT*	Belgium
	URL- Universitat Ramon Llull Fundacio Privada	*URL*	Spain
	R&S-Rohde and Schwarz GmbH and Co Kommanditgesellschaft	*R&S*	Germany
	The University of Surrey	*UniS*	UK
	SA VITEC	*Vitec*	France
	RUNCOM - RUNCOM Technologies Ltd	*RUNCOM*	Israel
	Institut für Rundfunktechnik GmbH	*IRT*	Germany
	Universidad Politécnica de Madrid	*UPM*	Spain
	WAVECOM - Soluções Rádio, Lda	*WAVECOM*	Portugal
	Med Cap Technologies, SA	*MCT*	Portugal

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1 Justification of Major Cost Items and Resources

1.1 Instituto de Telecomunicações (IT)

1.1.1 Work Performed

WP	Contributions
WP0	• Reception of the MMReports - Jan • Elaboration of 4th QMR, D0.1.4 • Elaboration of annual report, D0.4-PAR • Reception of the MMReports - Feb • Reception of the MMReports - Mar • Reception of the MMReports - April • Elaboration of 5th QMR, D0.1.5 • Reception of the MMReports - May • Reception of the MMReports - Jun • Reception of the MMReports - Jul • Reception of the MMReports - Aug • Elaboration of 6th QMR, D0.1.6 • Reception of the MMReports - Sep • Reception of the MMReports - Oct • Reception of the MMReports - Nov • Elaboration of 7th QMR, D0.1.7 • Reception of the MMReports - Dec • Reception of the MMReports - Jan • Reception of the MMReports - Feb • Elaboration of 8th QMR, D0.1.8 • Reception of the MMReports - Mar • Reception of the MMReports - Apr • Elaboration of 9th QMR, D0.1.9 • Elaboration of annual report, D0.4-PMR • Bank transfer to RUNCOM • Filling in all docs required for MCT accession to the Contract

	• Request an urgent PB meeting in Munich • Elaboration of the agenda and minutes of PB meeting in Munich • Elaboration of the agenda and minutes of PB and SUIT meetings in Paris • Elaboration of the agenda of the Israel meeting • Elaboration of the agenda of the Munich meeting • Coordination of integration meetings in Aveiro • Grouping all deliverables to be sent to the Reviewers for final review • Coordination of Review agenda for Algarve meeting and Aveiro demo
WP1	• Contribution to SUIT network profiles • An analysis of the different components in the overall architecture to locate possible bottlenecks • Collaboration in the SUIT reception profiles namely in the building profile • Refinement of SUIT network profiles • Reviewing deliverable D1.5
WP2	• Generation of longer error patterns to be uploaded to the website • Reviewing and suggestions to deliverable D2.5
WP3	• Design of MDC-3, two descriptions at the base layer • Design the combiner of MDC-3 • Start designing the real time version of MDC-3 encoder • Development of a joint-source channel coding (JSCC) system for the transmission of video encoded by a scalable video coder. This JSCC-system makes use of forward error correction codes and aims to find an optimized allocation between the source and channel rates. • Study of an alternative redundant slice system to better protect a multiple description bitstream in an error-prone environment • Fine-tuning of the MDC2-architecture and evaluation of the MDC-2 architecture
WP4	• Installing RTSP server in the Playout • Contribution to D4.4 on Service Scenarios and Service Intelligent Routing • Contributor to deliverable D4.5

	• Testing the Playout system delivered to IT by URL
WP5	• Testing the gateway computational complexity in MDC-1 and MDC-2 configurations in order to select the right hardware platform • Architectural definition for WAVECOM to implement some reception profiles, namely building, Rural and STB profiles • Contribution to deliverables D5.6, D5.7, D5.9 and D5.11
WP6	• Installing and testing an AVC PCI Express board. • Study the implementation of IGMP Client • Integration work in IT lab • Provision of all logistics to the integration work, BSTs mounting and testing • Contribution to deliverables D6.1, D6.2, D6.3, D6.4 and D6.5 • Testing new releases of the Playout and Gateway. Reporting the testing results in deliverable D6.3 • Support MCT and Wavecom in the testing of SUIT components in the field trials. • WiMAX and DVB-RCT problems debugging in SS site. • Use of several measurement equipment (DVB-T analysers, Network analysers, Oscilloscopes, etc)
WP7	• Writing up a paper for submission to the IEEE ISCE 2007 • Preparation of a camera-ready paper to IEEE ISCE 2007 entitled SUIT- Scalable, Ultra-fast and Interoperable Interactive Television • Presentation of SUIT to the Telecom Operator, Portugal Telecom • Presentation of SUIT to the Broadcaster, TVI - Televisão Independente on May 26 • Presentation of 2 papers at IEEE ISCE 2007 in Dallas • Writing the paper “A Full 2D IDCT with Extreme Low Complexity” for SPIE-San Diego, Aug 2007 • “H.264 Architecture”, Short course to Portugal Telecom • “Advanced Video Compression”, Tutorial in IEEE ICCE 2008 - Las Vegas • SUIT Workshop- Preparation and submission of a Special Session on Audio-visual Coding for Convergent Networks to the IEEE ISCE 2008 conference • Organization of a Special Session on Convergence (Deliverable 7.2) • Editing Deliverable 7.1.4

	• Advances in Digital Television, Short course to Anacom (National Spectrum Regulator)

1.1.2 Major Cost

Items	Description	Cost
Labour Costs	• 36 person/month spent by the IT	340,200.00€
Travel	• SUIT Integration Meeting Madrid, February 2007 • SUIT Project Meeting Ghent, March 2007 • SUIT Audit Brussels, March 2007 • SUIT Project Meeting Paris, March 2007 • DVB-T2 Basingstoke-Sony, April 2007 • PB meeting Munich- IRT, May 2007 • PB + SUIT meetings Paris, June 2007 • IEEE ISCE 2007 Dallas, June 2007 • SUIT Project Meeting Munich, November 2007 • SUIT Project Meeting Israel, September 2007	1,500.00€ 1,200.00€ 300.00€ 1,000.00€ 700.00€ 700.00€ 750.00€ 1,300.00€ 800.00€ 800.00€
Audits		3,000.00€
Total		**352,250.00**€

1.2 Instituut voor BreedBand Technologie Vzw (IBBT)

1.2.1 Work Performed

WP	Contributions
WP1	• Contributions to Activity 1.4 -Architecture and Reference Scenarios w.r.t. aspects related to MDC and FEC technology • Further analysis of the influence of introducing forward error correcting (FEC) algorithms into the playout. In the current design, FEC is applied two times: before packetization and at transmission level. The extra safety introduced by both systems might introduce unwanted levels of delay and should be studied in more detail.
WP3	• Partial implementation of redundant slices in the Vitec software • Implementation of EMDSQ in Vitec software. • Adjustments to the extractor to solve speed issues. • Development of JSCC system based on LDPCs • Rate-Distortion Optimisation • Adaptation of the combiner to satisfy the newly designed interfaces. • Study of forward error correcting codes for redundant slices.Development of JSCC system based on LDPCs • Rate-Distortion Optimisation • Evaluation of redundant slices in combination with scalable bitstreams. • Study of redundant slices in a multiple description environment. (cfr. WIAMIS paper) • Implementation of EMDSQ in Vitec software. • Development of JSCC system based on LDPCs • Rate-Distortion Optimisation • Development of a joint-source channel coding system for the transmission of scalable video started in May, 2007 continued. • Adaptation of the developed MDC-system (MDC-2) towards one integrated coder, with one SVC-coder and immediate generation of two descriptions • Development of a joint channel and source coding algorithm for redundant slices (MDC-1).

	• Evaluation of the designed algorithm based on the packet loss information obtained in WP2 and the agreed channel characteristics for both WiMAX and DVB in Paris. • Development of a joint-source channel coding system for the transmission of scalable video continued. • Development of a bitstream extractor for MDC-2 to meet the available rates of the different transmission channels for both descriptions • Development of a splitter to allow for the generation of the MDC streams from one single description stream. • Adaptation of the MDC2 system to the new release of VITEC's SVC-encoder. • Start of performance assessment of the MDC2 system • Integration of MDC-1 descriptions extractor module into the updated SUIT codec platform. • Extension of the extractor for MGS support. • Extension of API between Extractor and Video Server. • Debugging of the integrated extractors. • Development of the MDC-2 extractor. • Debugging of splitter. • Evaluation of the performance of MDC-2. • Evaluation of the performance of the proposed single description joint source-channel coding method
WP6	• Investigation of needed redundancy levels for MDC • Evaluation of the performance and fine tuning of the parser • Integration of MDC-2 descriptions extractor module into the updated SUIT codec platform with support for quality (FGS) and resolution scalable streams. • Started the integration of the entire MDC2-codec platform into the SUIT platform. • Integration of MDC-1 descriptions extractor module into the updated SUIT codec platform. • Integration of the entire codec platform into the SUIT platform • Integration of MPEG-21 modules into the SUIT platform. • Integration of MDC-2 components into the SUIT platform, continued • Change of the SUIT communication messages to reflect new hardware. • Integration of the communication module between the WiMAX and DVB-modules and the rest of the SUIT platform. • Solved memory leak problem in MDC2 implementation targeting integration within

	SUIT platform. • Further evaluation of performance in view of dissemination of results for ISCE conference • Integration and test of R&S Handover Analysis Software-Tools at IRT. Part of the test was the transmission and reception of two video-streams (Unicast) via WiMAX. Handover between two (even delayed) streams was tested successfully. • Continuation of performance tests (mainly bitrate in up/Downlink) with the updated WiMAX platform
WP7	• Preparation of dissemination of research work on MDC-2 through submission of conference publication • Presentation of the SUIT platform to the national Belgian broadcaster (VRT) • Writing paper presenting SUIT results at ETSI workshop

1.2.2 Major Cost

Items	Description	Cost
Labour Costs	• person/month spent on the project during period: 34.950 PM	182,694.20€
Equipment	• Router + 500GB Hard disk • KVM switch • 5 hard discs • VUB (software 125.00 € + 1053,00€)	266.12€ 156.20€ 838.84€ 1,178.00€
Travel	• SUIT Consortium Meeting Algarve, January 2007 • SUIT Project Meeting Ghent, March 2007 • SUIT Project Meeting Paris, June 2007 • SUIT Project Meeting Munich, September 2007 • SUIT Project Meeting Munich, November 2007 • SUIT Project Meeting Israel, September 2007 • SUIT Integration Meeting Aveiro, December 2007 • SUIT Integration Meeting Aveiro, January 2008 • SUIT Integration Meeting Aveiro, February 2008 • SUIT Audit Meeting Vila Moura, April 2008	292.49€ 2,704.78€ 702.51€ 1,650.14€ 1,537.67€ 1,402.31€ 515.90€ 390.98€ 621.10€ 3,305.35€
Consumables	• Seminar • Market Survey	135.00€ 880.45€
Adjustments	Personnel cost provisions Y1	3,488.76€

Audits		1,950.00€
20%indirect costs		39,854.41€
Total	Incl. 20% indirect eligible costs	244,565.23€

1.3 Universitat Ramon Llull Fundació Privada (URL)

1.3.1 Work Performed

WP	Contributions
WP4	• On-going implementation of the Intelligent Unit Web Service: • Still testing overall playout control commands • Contributions to deliverable 4.3 “QoS and handover”: QoS management strategies for the play-out. • Adaptation and integration of the library Live 555 Streaming Media to RTP Encapsulator in the playout. This will be the definitive solution instead of previous Jrtplib. • Preparation of the presentation for the audit**.** • M4.1 “Session and QoS support protocols implementation” accomplished. The defined and implemented protocols are: SDP, MPEG-21, RTP, RTCP, RTSP. • Starting the implementation of the Intelligent Unit Web Service. • Starting the implementation of the Playout Manager web application. • Working on playout video server for the integration in the entire system. • Implementation of the Intelligent Unit Web Service: o Database connection done. o Integration with the playout manager. o Implemented UDP commands to control the video server. o Started implementation of intelligent algorithms to take decisions according to parameters stored in the database, like packet loss, SNR or maximum bitrate for a given service. • Creation of a SUIT MySQL database. • Integration of SD&S (Service Discovery and Selection) tables from DVB-IPI in the SUIT database. • Implementation of the playout manager web application: o Defined web interface. o Database connection done. o Creation of different SVC/MDC SUIT services. o Control of the playout video server through the web service. o Generation of SDP signalling. o Definition of available platforms • Finishing of deliverable D4.4 “Intelligent IP router module”. • Implementation of the Intelligent Unit Web Service: o Testing overall playout control commands. o Still working on the implementation of intelligent algorithms to take decisions about the optimal service bit-rates. • Still working on the implementation of the playout manager web application

- Preparation of WP4 presentation in Paris Meeting.
- Ongoing implementation of the Intelligent Unit Web Service:
  - Testing overall playout control commands.
  - Working on the implementation of intelligent algorithms to take decisions about the optimal service bit rates.
- Ongoing implementation of the playout manager web application:
  - Definition of different types of services and their bit rates according to different scenarios taking into account two MDC implementations (balanced and unbalanced).
  - Working on integration of all modules.
  - Control of several video servers and platforms.
- Discussions about the adaptation of "MDC" audio in SUIT. The RTP encapsulation and synchronization of audio will be done at WP4 even though we have already spend the human resources assigned to activity 4.1.
- Deliverable 4.4 has been postponed to M18
- Deliverable 4.4 “Intelligent IP router module” has been finalized.
- On-going implementation of the Intelligent Unit Web Service:
  - Testing overall playout control commands.
  - On-going implementation of intelligent algorithms to take decisions about the optimal service bit rates
- On-going implementation of the Intelligent Unit Web Service:
  - New web methods have been implemented in order to receive from the video servers information about VoD users requests, QoD users requests, bit rate adaptations for each extractor .
  - On-going implementation of intelligent algorithms to take decisions about the optimal service bit rates. A class has been implemented in the IU web service including functions to compare service priorities, to calculate available bit rates, and to take decisions about the amount of bitrate that can be reduced or increased for each service.
- New tables have been created in the SUIT database in order to store information about MPEG-21 terminal characteristics and Base Stations information.
- Implementation of a SOAP client in the Video Server application to easily call the web methods of the Intelligent Unit WebService.
- A simple client authentication using the user login and password has been implemented in the video server to allow only certain users to access VoD services
- On-going implementation of the Intelligent Unit Web Service:
  - Testing and improvement of the web methods implemented in order to receive from the video servers information about VoD users requests, QoD users requests, bit rate adaptations for each extractor.
  - Testing and improvement of the intelligent algorithms that take decisions about the optimal service bit rates.
- On-going implementation of the Video Server:
  - Improvements in the client authentication. Now, encrypted login and password used in the messages between the video server and the terminals.
  - The video server is able to detect when a terminal leaves a session. After that, the video server notifies it to the Intelligent Unit, via SOAP,

	in order to optimise the bandwidth. o Working on the VoD and QoS request messages from the terminals using the RTSP protocol. • New tables have been created in the SUIT database in order to store information about the backup of the configurations • On-going implementation of the Intelligent Unit Web Service: o New commands to control the SD&Server. • On-going implementation of the Video Server: o New extractor of MDC-1 has been included in the video server. It allows setting and getting the target bitrate for each description. o For VoD services an extractor is used for each user. o A new extractor including MDC-1 and MDC-2 is being integrated. • New tables have been created in the SUIT database in order to store SD&S paramaters and RCIC information like terminal capabilities and transceivers information. • Working on Deliverable 4.5 •
WP6	• Playout metrics contribution in the deliverable 6.1 • General playout integration (meeting in Madrid): first version of the entire playout, a simple version without any intelligence. Integrated modules: offline video coding, multiple description coding (MDC-1, MDC-2), MD extractor, RTP encapsulation, DVB and WiMAX base stations. • Integration of the jrtplib library in the Gateway module. • Working on playout video server for the integration in the entire system: o Defined protocols to create/delete/modify sessions of a given service • On-going implementation of the playout manager web application o Working on integration of all modules • Intermediate meeting in Brussels to discuss about the SUIT interfaces between modules. • Tests to ensure the correct working of the video server in order to be able to make a demonstration in the IBC convention • On-going implementation of the playout manager web application • The management of several video servers is being improved. • The configuration of different types of services is being modified in order to adapt it to the final demonstrations. • Some UDP messages has been defined in order to communicate the RCIC module within the video servers • On-going implementation of the playout manager web application o The management of several video servers is being improved. o New backup configurations functionality has been implemented. o User managing improvements. (Session information, connection, etc..) • New version of the Video Server has been released for the overall integration and

	field trials
	• Support for the integration and testing of the overall system
	• On-going implementation of the playout manager web application
	  o User managing improvements. (session information, connection, etc..)
	  o Control of the SD&Server
	• Working in audio integration
	• Installation of SD&S Server.
	• Making installables of Playout Manager, Intelligent Unit Web Service and database.
	• Support for the integration and testing of the overall system.
	• Testing the playout manager web application.
	• On going integration of audio in the live555.
	• Testing different scenarios and services.
	• Including different types of MDC extractors in Video Server in order to tests different scenarios
	• Installation of the SD&S Server supplied by IRT. (Pull mode)
	• Playout – Gateway – Terminal, test and tuning.
	• Installation and testing the new Playout Manager and Intelligent Unit Web Service improvements.
	• Support for the integration and testing of the overall system.
	• Testing the playout manager web application.
	• Integration and testing the audio in the Playout.
	• Testing different scenarios and services.
	• Integration and testing the new version of the Extractor.
	• Development of a SUIT proxy server to authenticate and supply Internet access to the SUIT users.
	• Integration of the RCIC to retrieve data from the terminals characteristics, through the base stations
	• Installation and testing the new Playout Manager and Intelligent Unit Web Service improvements.
	• Improving Video Server software.
	• Support for the integration and testing of the overall system.
	• Testing the playout manager web application.
	• Integration and testing the audio in the Playout.
	• Integration and testing the new version of the Extractor

	• Integration and testing the new version of the Extractor that solves some real-time bugs. • Testing the Video Server software for final release • Validation of different playout modules • Analysis of the playout delay • Improving Video Server software to deliver real-time contents • Support for the integration and testing of the overall system
WP7	• Reading articles about efficient video transmission and optimization in order to plan dissemination tasks • An Article sent to BTS (Broadband Multimedia Symposium) has been accepted • Writing an article about RTP encapsulation, synchronization and signalling of SVC/MDC streams to be sent to the ISCE 2008 • Contribution in deliverable D.7.1.4. Plan for using and disseminating/exploiting knowledge. • Finishing the article about RTP encapsulation, synchronization and signalling of SVC/MDC streams to be presented in April in the ISCE 2008 • Preparation and presentation of the article “Delivery of SVC/MDC streams over Wimax and DVB-T networks” on 16th April in the 12th Annual IEEE International Symposium on Consumer Electronics ISCE 2008 at Vilamoura (Algarve). • Preparation and presentation of the article “Synchronization architecture for DVB-H seamless handover” on 16th April in the 12th Annual IEEE International Symposium on Consumer Electronics ISCE 2008 at Vilamoura (Algarve). • Presentation of the article “Intelligent playout for the optimal IP distribution of H264 SVC/MDC services over broadband and broadcast platforms” on 1th April in the 2008 IEEE International Symposium on Broadband Multimedia Systems and Broadcasting at Las Vegas • Writing an article about RTP encapsulation, synchronization and signalling of SVC/MDC streams to be sent to the ISCE 2008. • Contribution to deliverable 7.1.3 • Writing an article based on the playout intelligence • Presentation of a paper at 2008 IEEE International Symposium on Broadband Multimedia Systems and Broadcasting, Las Vegas, USA, March 2008: “Intelligent playout for the optimal IP distribution of H264 SVC/MDC services over broadband and broadcast platforms”. • Presentation of a paper at 12th Annual IEEE International Symposium on Consumer Electronics, ISCE 2008, Algarve, Portugal: “Delivery of H264 SVC/MDC streams over DVB-T and Wimax networks”.

1.3.2 Major Cost

Items	Description	Cost
Labour Costs	• person/month spent on the project during period: 33.10 (include 20%)	116,836.94€
Equipment	• Computer • Hard disk drive	39.64€ 5.42€
Travel	• SUIT Integration meeting Madrid, February 2007 • SUIT Project Meeting Ghent, March 2007 • SUIT Project Meeting Paris, June 2007 • SUIT Project Intermediate Meeting Brussels, July 2007 • SUIT Project Meeting Israel, September 2007 • SUIT Project Meeting Munich, November 2007 • SUIT Integration Meeting Aveiro, December 2007 • SUIT Integration Meeting Aveiro, January 2008 • SUIT Integration Meeting Aveiro, February 2008 • IEEE International Symposium on Broadband Multimedia Systems and Broadcasting, Las Vegas, March 2008 • SUIT Audit / ISCE 2008, Aveiro, April 2008 • SUIT final demo, Aveiro, May 2008	262.35€ 1,505.93€ 971.57€ 748.71€ 2,127.51€ 1,487.18€ 1,004.84€ 896.84€ 1,444.72€ 2,048.96€ 1216.29€ 1482,90€
Other costs	• Contribution to purchase of marketing studies	545.22€
Audit certificates	• Audit certificate first period • Audit certificate second period	700,00€ 725,00€
Total		134,050.02€

1.4 Rohde and Schwarz GmbH and Co Kommanditgesellschaft (R&S)

1.4.1 Work Performed

WP	Contributions
WP4	• Verification tests of the user interface and control SW for the two test signal generators (including channel simulators) for horizontal HO tests The development of the control SW for the test receiver is still ongoing. • Development of a SW tool for the analysis of PQoS during HO with the aim to implement this tool on the test receiver platform • Development of the control SW for the test receiver • Development of a new version of the SNMP MIB for the test receiver • Editing of the final draft of deliverable D4.3 'QoS management and handover' based on the received contributions from involved partners
WP6	• Implementation of QoS parameters relevant for the RF frontend of the DVB-T/H test receiver • Development of control SW for retrieving data from test receiver • Implementation of test metrics on the test receiver for HO initiation with focus on the DVB-T frontend • Verification of test metrics for handover as implemented on the test receiver • Installation of the testbed for HO testing and testing of the integrated components • Intergration step of two modulators/ test signal generators and testing of remote control via HO software tool • Integration of the test receiver into the testbed for handover • Development of user interface for the control of the two demodulator frontends • New buffer management system added to the handover control software • Validation tests of the handover testbed with a new buffer management algorithm • Optimisation of the HO algorithm, especially of improving the packet loss rate • Preparation of tests of vertical HO between DVB-T and WiMax planned in cooperation with IRT • Identification of suitable frontends for WiMax HO and their implementation • Testing of WiMax HO with diversity reception on IRT premises
WP7	• Preparation of joint contribution with IRT for Algarve seminar. • Preparation of input to exploitation plans.

1.4.2 Major Cost

Items	Description	Cost
Labour Costs	• person/month spent on the project during period: 14,75	269,121.70€
Travel	• Suit audit preparation meeting and technical audit Brussels, March 2007 • SUIT Project Meeting Paris, June 2007	698.43€ 1159.08€
Other Costs	• Contribution to purchase of marketing studies • Cost for Financial Audit Certificate • Adjustment on previous period(s)	543.26€ 2948.00€ -344,51€
Total		274,125.93€

1.5 The University of Surrey (UniS)

1.5.1 Work Performed

WP	Contributions
WP2	• Collaboration with IT in Aveiro to work on WiMAX & DVB emulator and DVB-T software. • Attended project meeting for audit preparation in Ghent, Belgium and attended technical audit in Brussels. • Provide support to IT on porting hybrid WiMAX and DVB emulator software to another small PC for audit. • Coordination of deliverable D2.5: including preparation of template, initiating email discussions, editing of deliverable. • Supplied raw video material “Lord of the Ring” in YUV format for testing of MDC using the error pattern generated in WP2.
WP3	• Study of MDC schemes to consider their implications for the Unequal Power Allocation scheme. • Design of offline loss simulator software for SUIT encoder and decoder for simulated transmission of SVC packets over WIMAX channels. Simulator was designed to provide different transmission parameter settings to different SVC layers, allowing the testing of UPA and UEP schemes. • Design of an unequal power allocation scheme for transmission of scalable video coded packets. • UPA scheme implemented in C for simulation purposes. • Extensive UPA simulations carried out to generate lookup tables which are used for fast decision in UPA algorithm. • Contributed progress report on UPA to D3.3. • Design of UPA simulator with user interface for simulations using Microsoft visual C++ MFC. Carried out simulation of demo platform designed by UniS in WP2 by integrating H.264 stream extractor and RTP packetizer including WIMAX error trace extractor. • Contributed to D3.4 with results on optimisation of the UPA scheme and extensive simulations with various WIMAX channel conditions.
WP4	• Tests were carried out to evaluate the processing load required to encode/decode the audio. • Open source software for AAC investigated to determine best options for including audio in the SUIT demonstrator. A workplan for the audio work was created, which includes consideration of the implications for audio on the gateway.

	• Investigation of different RTP packetisation schemes to decide on the encapsulation method for SUIT AAC. • UniS implemented the LATM software in live555. The implementation was done according to ISO/IEC 14496-3:200.1 standards. The LATM format implementation was performed as it is required for RTP encapsulation (RFC 3016), and there was no good quality open source code available. • Integration work on the audio was carried out. UniS contributed to the integration meeting in Aveiro, and provided additional support afterwards. • Work was carried out to fix synchronization issues between audio and video. In addition, development work on audio decoding software for the terminal was undertaken. • Audio combiner software developed for use in the gateway. • Audio handling C code was provided for use in the playout.
WP6	• Contributed audio metrics discussion to D6.1 Contribution to D7.1.4, concerning Surrey usage and exploitation.
WP7	• UniS prepared and submitted a number of conference papers to disseminate SUIT related work on error robust video transmission. The following papers have been accepted for publication: o Z. Ahmad, S. Worrall, A. M. Kondoz, “H.264 Header Compression Scheme for Wireless Communication”, 4th International Conference on Visual Information Engineering (VIE 2007), 25 - 27 July 2007, London, UK. o A.C. Yu, C.T.E.R. Thushara, S. Worrall, H.A. Karim, S. Dogan, A. M. Kondoz, “A Redundant Frame Strategy Towards Error Robustness For The H.264-Based Scalable Video Coding Systems”, Picture Coding Symposium (PCS 2007), November 7-9 2007, Lisbon, Portugal. o S. Nasir, S.T. Worrall, M. Mrak, A.M. Kondoz, “An unequal error protection scheme for object based video communications”, IEEE International Symposium on Consumer Electronics, ISCE 2008, April 14-16 2008, Algarve, Portugal. o Maheshi B. Dissanayake, Chaminda T.E.R Hewage, Stewart T. Worrall, Anil C. Fernando, Ahmet M. Kondoz, “Redundant Motion Vectors For Improved Error Resilience In H.264/AVC Coded Video”, IEEE International Conference on Multimedia & Expo, ICME 2008, June 23-26 2008, Hannover, Germany. o Zaheer Ahmad, Stewart Worrall, Ahmet Kondoz, “Unequal Power Allocation for Scalable Video Transmission Over WiMAX”, IEEE International Conference on Multimedia & Expo, ICME 2008, June 23-26 2008, Hannover, Germany. o Sabih Nasir, Stewart Worrall, Marta Mrak, Ahmet Kondoz, “Multi Bearer Channel Resource Allocation For Optimised Transmission Of Video Objects”, IEEE Int. Conf. Image Processing, ICIP 2008, October 12–15, 2008, San Diego, California, U.S.A.

	o Z. Ahmad, S. Worrall, A.M. Kondoz, "Error Robust Video Communications for Wireless Networks", IET Visual Information Engineering 2008, VIE 2008, 29 July - 1 August, 2008, Xi'an, China. • UniS continue to work on an additional UPA paper to be submitted in a Journal. • Contacts were made with the BBC and BT about the SUIT project. Although both parties are unable to attend the demo, arrangements are being made to present the demo results to them at their premises to get their feedback and to gauge their interest in SUIT technologies.

1.5.2 Major Cost

Items	Description	Cost
Labour Costs	• Person/month spent on the project during period: 18.70 (include 20%)	173,073.55€
Travel	• SUIT Consortium Meeting Algarve, January 2007 • SUIT Project Meeting Ghent/Brussels, March 2007 • Project Board Meeting Costs Munich, May 2007 • SUIT Project Meeting Paris, June 2007 • SUIT Project Meeting Israel, September 2007 • SUIT Integration Meeting Aveiro, December 2007 • SUIT Integration Meeting Munich, March 2008 • SUIT Review Meeting, Aveiro, May 2008	935.58€ 2,419.95€ 657.40€ 826.17€ 1,533.90€ 865.81€ 952.41€ 999.03€
Consumables	• Replacement Laptop Power Supply • Replacement USB keyboard for broken laptop • Travel vaccinations, as required by health and safety policy • DHL Document Postage • Video Quality Assessment Software • Contribution to purchase of marketing studies	65.69€ 17.12€ 201.17€ 9.96€ 200.42€ 918.39€
Other Costs	• Currency exchange	62.30€
Audit		2567.39€

Total		186,306.24€

1.6 SA VITEC (VITEC)

1.6.1 Work Performed

WP	Contributions
WP3	• Support for interfacing SVC encoder into MDC framework • Contributing to deliverable D3.2 concerning the Design of scalable multiple-description video coding
WP5	• Improving the SVC reference platform that will be closed to the real-time SVC encoder/decoder package • Studying the real-time implementation of the SVC encoder/decoder • Editing and contributing to deliverable D5.5 concerning the preliminary version of real-time encoder • Improving the spatial scalability in the SVC reference platform • Updating the syntax of the SVC bitstream • Providing the project with an updated release of the SVC reference platform • Improving the SNR scalability in the SVC reference platform • Improving temporal scalability • Correcting the scalability SEI • Starting the development of a real-time implementation of the SVC encoder • Development of a real-time implementation of the SVC encoder/decoder • Achievement of a real-time streaming demonstration enabling to capture live HD video feeds, encode them in AVC, decode and render them on a remote terminal • Re-direct development of a real-time SVC codec towards the CGS model as agreed in the two first SVC profiles that should be in first standardized. • Propose to include an SVC-AVC trans-coder to secure the introduction of SVC technology on the market • Development of a real-time HD SVC codec • Development of a SVC-AVC transcoder • Improvement of the robustness of the SVC decoder by introducing NALs and picture loss concealment • Reordering NALs for satisfying to a rational precedence needed • Delivery of the report D5.8 describing it • Delivery of an improved release of the real-time HD SVC codec

	• Delivery of its user manual within D5.10
WP6	• Preparation of the integration of MD-SVC modules in the Playout and the Gateway during Brussels sub-meeting • Decoding truncated bitstreams • Improvement of quality information report in NALUs • Delivery of an improved FGS codec release • Starting the development of a streaming chain enabling to encode and decode in real-time trough a client-server architecture, in order to help consortium members in integrating the real-time HD SVC codec • Delivery of the RT SVC streaming chain over RTP • Description of the streaming chain in deliverable D6.3 • At the request of the consortium, starting the integration of audio in the streaming chain
WP7	• Promotion of results during the TV Mobile & 2.0 conference that stood in Lorient (FR) on Dec. 13-14 (300 project leaflets has been distributed) • Interview of several participants about the technology developed by SUIT et gathering of the results in D7.1.4 • Definition of the exploitation that could be made with the expected results coming out the project concerning video technology • Preparation of a presentation for the Paris SUIT Meeting • Writing about it a contribution to be added to D7.1.3 • Hosting SUIT demo on Vitec's booth during IBC 2007 • Study of a market analysis about quad-play services • Writing about it a contribution to be added to D7.1.3

1.6.2 Major Cost

Items	Description	Cost
Labour Costs	• person/month spent on the project during period: 26	282,115.60€

Travel	• SUIT Project Meeting Ghent, March 2007 • SUIT Project Audit Brussels, March 2007 • SUIT Project Integration Sub-Meeting Brussels, July 2007 • IBC 2007 Amsterdam, September 2007 • SUIT Project Meeting Israel, September 2007 • SUIT Project Meeting Munich, November 2007 • Conference TV Mobile & 2.0 Lorient, December 2007 • SUIT Integration Meeting Aveiro, February 2008	1,054.00€ 337.00€ 740.00€ 1,024.00€ 1,600.00€ 1,853.00€ 649.00€ 1,216.00€
Host Meeting	• SUIT Project Meeting Paris, June 2007	4,224.00€
Other Costs	• Contribution to purchase of marketing studies • Participation to the booth rent by Vitec in IBC 2007 • 300 SUIT leaflets	601.00€ 1,474.00€ 335.00€
Total		297,222.60€

1.7 Runcom Technologies LTD (RUNCOM)

1.7.1 Work Performed

WP	Contributions
WP2	• Tables for Wimax and DVBRCT of RSSI Vs C/N Vs Throughput in speed of 60km/h have been provided to IRT as the basics figures for coverage simulations • Tables for Wimax and DVBRCT of RSSI Vs C/N Vs Throughput in speed of 120km/h have been provided to IRT as the basics figures for coverage simulations • Supporting and discussions with IRT on D2.5 concerning the coverage in DVB and Wimax systems
WP5	• Runcom has participated in the general design of the Ultra Fast Gate Way taking into account Indoor and outdoor scenarios. • Few network profiles have been discussed • Runcom has prepared its view regarding the network profile and presented it in Paris meeting • Runcom has assisted to IRT with Wimax tables and information on relevant parameters • Runcom has sent its contribution to IRT as inputs for the coverage analysis. (this work is a part of WP2 for D2.5) • Runcom has prepared and modified the WiMAX system to meet SUIT requirements (2.5GHz, 10MHz Bandwidth) and delivered the platform for the SUIT audit. • Runcom has continued its effort in developing the horizontal HandOff on the DVB-RCT platform through the implementation of two transceivers in the User Terminal. • Runcom has assisted in the integration process of the Demonstrator to get it ready to the audit. • Contribution to D5.6 (SoC and FPGA Preliminary report) which describes the implementation and test performance on WiMAX and DVB-RCT systems. Performance results were incorporated within Runcom contribution. • Runcom has continued its effort in developing the horizontal HandOff on the DVB-RCT platform through the implementation of two transceivers in the User Terminal. • Runcom assisted IRT in WP4 in analysing Vertical HandOff • Runcom has begun to prepare the interface needed in the BST side for networking information (RSSI, modulations and other relevant information). The interface will be activated in the Ethernet connector of DVBRCT and Wimax systems. • Runcom has begun to prepare small Wimax modem unit (User Terminal) with Ethernet connector. It will replace the unit has sent earlier to Suit consortium and it

	will be used
	
	• By WAVECOM in its fixed Gateway module.
	
	• Runcom has continued to prepare a small Wimax modem unit (User Terminal) with Ethernet connector. It will replace the unit has sent earlier to Suit consortium and it will be used by WAVECOM in its fixed Gateway module.
	
	• Runcom has continued to prepare the interface needed in the BST side for networking information (RSSI, modulations and other relevant information). The interface will be activated in the Ethernet connector of DVBRCT and Wimax systems.
	
	• Runcom has continued to design the interface needed in the BST's side to the playout to get the link information. Two documents have been prepared and provided to IBBT
	  o Document 1: "Wireless system to play out interface principles".
	  o Document 2: "Wimax Wireless IPC"
	  o Document 3 "DVBRCT wireless IPC" will be provided during October
	
	• Runcom has continued to design the interface needed in the BST's side to the playout to get the link information.
	
	• Interface simulation has been demonstrated to all partners during the meeting in Tel Aviv
	
	• During the discussions in Tel Aviv Meeting it was made clear that there is a problem with Wimax Power Amplifier. In the next month this problem should be solved by trying to achieve a such power amplifier from R&S
	
	• TOC for the renew deliverable D5.6 has been distributed to partners involved.
	
	• Runcom has continued to design the interface needed in the BST's side to the playout to get the link information. The first phase work in Wimax system has been completed. The work on DVBRCT interface has begun.
	
	• Actions have been taken to help Wavecom to design Power Amplifier for Wimax.
	
	• Runcom has continued the HO developing and tests in the DVBRCT using two transceivers
	
	• The title of D5.6 was amended to include contributions on reception profiles and hence the contents has been modified to reflect the newly added effort "SoC + FPGA and Reception profile report" (SUIT_430).
	
	• Runcom has continued to design and implement the interface as required in the BST's side to the playout to get the link information. The first phase work in Wimax system has been completed. The work on DVBRCT is in progress.
	
	• Runcom continued its support to Wavecom on design of suitable Power Amplifier for Wimax.
	
	• Runcom has continued the HO developing and tests in the DVBRCT using two transceivers. During November, Runcom has started integration process with SUIT gateway.
	
	• Runcom prepared and delivered a second WiMAX platform with proper interface to PA

WP6	• Runcom has conducted preliminary performance on critical parameters (throughput, delay and HO) as a necessary step prior to test with channel fading simulator provided by RS. • Runcom has its effort in conducting preliminary performance test on critical parameters (throughput, delay and HO) as a necessary step prior to test with channel fading simulator provided by RS • Runcom has continued its effort in developing the horizontal HandOff on the DVB-RCT platform through the implementation of two transceivers in the User Terminal. • Runcom prepared and sent the DVBRCT mobile test report. • Runcom has continued the HO developing and tests in the DVBRCT using two transceivers • Runcom has continued the HO developing and tests in the DVBRCT using two transceivers. • HO in DVBRCT and Wimax systems have been demonstrated to all partners during the meeting in Tel Aviv • Reserve Wimax module has sent to WAVECOM as a replacement. • BST SW has sent to WAVECOM in order to upgrade the performances and to solve error problem • Discussions on the trial concerning Power Amplifier, filters, frequencies have been held with MCT. Comment to field trial deliverable written by MCT • Supporting the integration work in Wavecom with Wimax system. • Preparing and providing operational instructions • Starting of the Gateway integration • On going discussions concerning the field trial and set-up design. • Supporting the integration work in Wavecom with Wimax system and DVB-RCT. • Progress on Gate Way integration together with the wireless systems • Runcom has designed new duplexer for the selected UHF frequencies • SW implementation and SW integration of IPC, multicast and HO in DVB-RCT platform. Release of update SW version. . • D5.11 was distributed Start to SUIT partners. • Runcom continued HO development and tests in the DVBRCT. • Runcom has implemented two types of the new duplexer for the selected UHF frequencies • Overall lab integration and test of the two platforms (WiMAX and DVB-RCT platforms) focussing on throughput, multicast , IPC and HO • Extensive and Overall lab integration and test of the two platforms (WiMAX and DVB-RCT platforms) focussing on throughput, multicast, IPC and HO carried on

during February. Integration team from Runcom has joined the integration at Aveiro labs.

- Two main integration tests have been made:
  - Lab tests
  - Field tests
- Lab Tests
  - In the lab we have conducted throughput tests using Iperf traffic Generator:
  - In DVBRCT system we got up to 20Mbit/sec (DL, In 64QAM modulation and code rate ½).
  - In Wimax we got up to 8Mbit/sec (DL, In 64QAM modulation and code rate ½).
  - In both systems Multicast & Unicast transmitting method have been tested and found operating.
- Hand over tests in the lab we were confronted with problems and no stable HO was accomplished. The problems have been investigated in Runcom labs during the next two months (February and March).
- Field Tests
  - In the field We have tested mobile environment in a speed up to 150km/h. The BST's (Wimax and DVBRCT) have been located in one site (IT site).
- Wimax external power amplifier has reduced the CINR by more than 15dB so the Wimax mobile tests have been performed with no power amplifier. Runcom has recommended to the Integration leader to find a solution.
- Test have been performed in both systems. We drove in a speed up to 150km/h received video traffic in the car of about 0.5Mbit/sec (using VLC). In the high way A25 the quality of the video received in the car was very good. In some other points there were quality degradations mainly because of coverage problems. In the tests we found that the CPE's are Disconnected and hardly synchronized. These problems have been investigated in Runcom labs during the next two months (February and March)
- In the 3rd and 4th week of February mobile tests continued showing better results (as were indicated by WP6 leader. In DVBRCT system 14Mbit/sec and Wimax 5Mbit/sec were achieved.
- HO in Wimax has been performed with poor results.
- The integration work has concentrated on establishing Hand-Over in Wimax and DVBRCT systems.
- Runcom has upgraded the SW versions as results of the integration at Aveiro.
- The special mobile terminal that was developed for SUIT was delivered to the integration team at Aveiro.
- Field Test has begun to perform at Aveiro with the mobile terminal.
- During the month the integration team at Runcom has continued to test the equipment at Runcom as well. As results of the integration at both sites (IT - Aveiro and Runcom) Runcom has upgraded the SW and sent it to the integration team at Aveiro.

	• DVBRCT & Wimax systems Integration continuation • Completing work on D5.6 which was delivered on December. • Start of multicast design for DVB-RCT platform. • Work on D5.11 " SoC + FPGA and reception profiles prototype". • Runcom has continued the HO development and tests in the DVBRCT using two transceivers. • Runcom has designed and implemented a new duplexer for the selected UHF frequencies • IPC design and implementation for DVB-RCT • IPC integration with WiMAX platform with the support of IBBT. • Progress on Gate Way integration together with the wireless systems • Testing of the ENG equipment (DVCAM, H264 En- / Decoder over IP)
WP7	• Runcom prepared presentation on WP7 status and deliverables • Preparing the D7.1.2 • Deliverable D7.1.4 has been distributed among the partners. D7.4 in preparation stage • Deliverable D7.4 has been prepared and distributed among the partners • Review and modification of D.7.4. Contribution to D7.1.4. • Preparing and presentation of D7.1.3 TIP (Technology Implementation Plan) objectives and work assignment for SUIT consortium partners on know how exploitation and definite plans for commercialisation • Study of market surveys to understand major trends which could help evaluation of the potential of SUIT partner's exploitation plans. Listing of important market surveys and decision making for the purchase of most relevant market surveys which could assist in presenting a viable TIP Deliverable (D7.1.3) • Preparing and distributing to SUIT members ToC for D7.1.3 (Technology Implementation Plan), reviewing different version of the deliverable. Runcom has provided an updated market analysis of the Broadband Wireless Mobile Access systems including Mobile WiMAX and the emerging LTE system together with its exploitation plan • Preparing and distributing to SUIT partners several relevant market surveys for evaluation and purchase. Runcom reviewed and contribute to the TIP deliverable (D7.1.3) • Runcom has reviewed D7.1.3 deliverable and compiled comments and topics to be addressed or enhanced on final TIP deliverable

1.7.2 Major Cost

Items	Description	Cost
Labour Costs	• person/month spent on the project during period: 45.91	383,134.00€
Equipment		
Travel	• SUIT Project Meeting Ghent, March 2007 • SUIT Project Meeting Paris, June 2007 • SUIT Project Board Meeting Munich, May 2007 • SUIT Project Meeting Munich, November 2007 • SUIT Integration Meeting Aveiro, February 2008 • SUIT Integration Meeting Aveiro, April 2008 • SUIT Integration Meeting Portugal, January 2007 • SUIT Integration Meeting Belgian, February 2007	1,349.00€ 2,292.00€ 1,035.00€ 1,171.00€ 1,277.00€ 1,177.00€ 1,648.00€ 1,249.00€
Consumables	• Material for the DVB-RCT and WiMAX platforms • Material for the DVB-RCT and WiMAX platforms • Material for small WiMAX modem for Wavecom as part of GateWay	7,463.00€ 11,560.00€ 11,571.00€
Other Costs		
Total		424,926.00€

1.8 Institut für Rundfunktechnik GmbH (IRT)

1.8.1 Work Performed

WP	Contributions
WP1	• Work on contribution to Audit-Presentations of WP1 • Continuative examinations of Reference Scenarios, in particular in respect to handover issues • Correction of D1.5, in particular sections related to MHP scenarios and terminal
WP2	• Start work on WiMAX coverage calculations with IRT's Frequency Planning Software FRANSY: Identification of relevant parameters to be fed into the system • Discussion with RUNCOM about detailed receiver parameters (dependency of received signal strength respectively Carrier to Interference, the selected modulation and coding scheme by the system and the resulting bandwidth) • Execution of several WiMAX coverage calculations deploying IRT's frequency planning tool FRANSY. Focus on the north-eastern part of Munich, where WiMAX tests will be performed. First results in respect of resulting bandwidth capacity (graphical maps) become available for certain transmission and reception conditions. Some further calculations are subject to be performed iteratively, taking into consideration different scenarios (fixed/mobile) to be envisaged. • Calculation of a combined (DVB-T + WiMAX) coverage map in respect of a mobility (60km/h) scenario. For the simulation, WiMAX and DVB-T transmission antenna has been positioned in a way that an overlapping region allowing for a potential mobile reception of both DVB-T as well WiMAX signals exists. Insertion of results in D2.5
WP4	• Thoughts and several internal discussions about resource management issues regarding to transmission of content also for multicast) over networks deploying adaptive modulation and coding schemes like WiMAX. Identifications of points for further discussions about required/achievable response time especially in highly time variant environments like in the mobile scenario. • Clarifications about IRT contributions in respect to Deliverable D4.3. • Investigations about QoS related handover issues from the terminal side • Writing of a contribution (D4.3) • Provision of the first version of the SD&S server to URL • Discussions related to the communication between SD&S client and gateway • Contribution of a section towards D4.5 describing the SD&S server •
WP6	• Preparation of Audit-presentation of WP6

	• Discussions to clarify more in detail the work to be done in A6.2
	• Initiation of work in respect to D6.1/D6.3
	• Again correspondence with the BNA (Federal Networking Agency of Germany) requesting for an extension of period of the WIMAX testing licences currently time limited to end of 2007 till project end.
	• Correspondence with the BR (Public Bavarian Broadcaster) in respect to the antenna locations (WiMAX) on top of the transmission tower (steel construction) owned by the BR. Clarifications are required with respect to exact antenna height, wind load, power distribution as well as installation position of the base stations.
	• Preparation and participation at the Consortium Meeting + Project Board Meeting in Paris
	• Communication with the BNA (Networking Agency) and update of the WimAX Licences from 7 MHz to 10 MHz (due to availability of WiMAX equipment)
	• Proofread of the updated Technical Annex
	• In-depth considerations in respect of the mounting (orientation, height, elevation) of the WiMAX sector antennas. In particular results from Activity 2.5 (coverage calculations) assist in the set-up of the WiMAX system to carry out in an optimum way all envisaged tests. (It has to be noted, that re-mounting/re-adjusting of transmission antennas at the transmission tower (steel construction) is difficult and exact orientation of the antennas has to be determined when mounted)
	• Preparation and Participation at Project Board Meeting (Munich)
	• Extensive discussions and reconsideration of IRT tasks in SUIT, in particular responsibility for WP6
	• Generation and provision of SQL script for generating the SD&S database (Playout)
	• Internal discussions about exact WiMAX antennas orientation/elevation angels. Performed coverage calculations have been of relevance in respect of the optimal mounting of the antennas in order to have both, reception at IRT premises and optimal connectivity in the far (field trials). Re-adjusting of the antennas installed on top of the transmission tower (steel construction) at 90 meter height is complicated and should to be avoided at later point in time
	• First WiMAX transmission tests performed
	• Continuation of initial WiMAX transmission & reception tests, including bitrate measurements for uplink and downlink
	• To perform some further WiMAX transmission & reception tests. Setup and demonstration of uplink and downlink streaming applications
	• Assistance integration work of the SD&S server into the SUIT-playout
	• Integration SD&S server/client:
	  o Provision of software packages to support pull mode at the playout
	  o Support of URL during the integration process
	• Participation at the integration meeting in Aveiro (e.g. to perform delay, jitter, bitrate measurements with Chariot at the WiMAX system)
	• Integration and test of the ENG-system in Aveiro

	• Written contributions towards Deliverable D6.3 • E-mail support for integration SD&S server/client • Firmwareupdate of Munich WiMAX system (Alcatel) from Version 2 to Version 3 • Tests performed with the ENG-system via WiMAX (Munich) • Further tests with the ENG-system via WiMAX (Munich) • Field measurements performed using Chariot (WiMAX- up-/down-link) for selected positions in the field (without mobility) • Performance tests (up-link/downlink bitrates) for the new firmware
WP7	• Contributions towards Deliverable D7.1.2 • Presentation of SUIT Project to IRT boards of directors • Study and evaluation of summaries of several market analysis • Written contribution towards Deliverable D7.1.3 • Demonstration of transmission of streaming content via WiMAX (both uplink and downlink path) to decision makers of the public German broadcasters • Contribution of an updated section concerning feedback of operators

1.8.2 Major Cost

Items	Description	Cost
Labour Costs	• person/month spent on the project during period: 13.54	189,915.93€
Travel/Hosting	• SUIT Audit Brussels, March 2007	1,717.04€
	• SUIT Project Board Meeting Munich, May 2007 (Hosting Costs)	209.79€
	• SUIT Project Meeting Paris, June 2007	689.12€
	• Project Meeting with Alcatel, October 2007 (Hosting Costs)	41.47€
	• SUIT Project Meeting Munich, November 2007 (Hosting Costs)	776.47€
	• SUIT Integration Meeting Aveiro, January 2008	1,434.23€
	• SUIT Final Audit (Demo) Aveiro, May 2008	2,028.91€
Consumables	• WiMAX Antennas	233.00€
Other Costs	• Installation costs by “Reiter Antennenbau”	6,098.50€
	• Cost sharing of several Market surveys	526.00€
	• WiMAX Transmission Licence Fee for 2007	60.00€

Audits	• Cost for Financial Audit Certificate	1,835.00€
Total		206,565.46€

1.9 Universidad Politecnica de Madrid (UPM)

1.9.1 Work Performed

WP	Contributions
WP3	• Optimization of synchronization module in the gateway. • Optimization of the decapsulator for the terminal • Optimization of a preliminary rate control strategy based on packet error probability models and a distortion model within a scalable frame • Measuring tasks driving to the optimization of the distortion model. • Measuring tasks driving to the optimization of the channel model. • SW optimization and debugging • Optimization of a preliminary rate control strategy based on packet error probability models and a distortion model within a scalable frame. • SW optimization and debugging. • Preparation for the Paris SUIT meeting • SW optimization and debugging. • Developing of a rate-control strategy to consider feedback from the terminal. • Integration of PER class info in the rate-control strategy • Developing of an optimized rate-control strategy considering last policies and feedback from the terminal. • Channel model adaptation support. • Preparation of the Tel-Aviv meeting • Set up of rate-control optimization testbed • Presentation for Munich (IRT) meeting. • Rate-Control optimization measurements and tests. • Contribution on Rate-Control optimization to D.3.4 “Optimization of the entire system”
WP5	• Hosting of and participation in the Madrid Integration Meeting. • Integration of EMDSQ combiner in the gateway. • Integration of RTP encapsulator in the gateway.

	• Integration of the decapsulator within the terminal. • Integration and debugging of EMDSQ combiner in the Gateway. • Participation in the Ghent meeting. • Contribution and integration of WP5 presentation for the Audit. • Integration of the gateway in the SUIT demonstrator for the Audit. • Participation in the Audit. • Contribution to and finalization of D5.4 Gateway Report. • Implementation of NALU fragmentation support at the gateway. • In depth study of rate-control techniques for wireless video streaming. • Implementation of a first approach to rate control strategies at the gateway. • SW optimization and debugging • Implementation of a simulator for ‘drift-free’ decoding. • Implementation of a PSNR measuring tool for optimization purposes. • Development of a new distortion model. • Rate-control module testing in a real transmission environment. • Evaluation and analysis of the first rate-control module results. • Preparation of the presentation for the Paris SUIT meeting • Integration and testing of MDC-2 combiner within the gateway. • Modification of the gateway SW to allow scheduled sender-driven retransmissions. • Development of a preliminary feedback module for the gateway and the terminal • Integration and testing of MDC-2 combiner within the gateway. • Development of a retransmission scheduling module. • Development of feedback modules at the terminal and the GW. • Development and integration of the rate-control module • Implementation of multiple programs support. • Setting up a SUIT prototype at IBBT premises. • Preparation of the Tel-Aviv meeting • Update of the SUIT prototype at UPM premises with the new released modules. • SW optimization and debugging based on prototype results. • Integration work. • Presentation for Munich (IRT) meeting.

	• Editing and finishing D5.7 “Gateway Report” • Gateway SW debugging and support. • Integration work at the Aveiro integration meeting
WP7	• Elaboration of the local SUIT web page. • Submission of a paper on wireless packet models to the 2007 IEEE 66th Vehicular Technology Conference. • Dissemination of results to Spanish companies (Alcatel, Lucent, Sapec, …) • Paper on the gateway architecture for the Spanish Communications R&D Conference (Telecom I+D, Valencia, October 2007) • Attendance to the JVT Meeting (Geneva, 29-Jun – 06-Jul) • Follow-up of the market-surveys candidates • Presentation of the SUIT concept to a delegation of the Spanish Ministry of Defence • Presentation of a paper on the PERCP Model at the IEEE Fall’07 Vehicular Technology Conference (Baltimore, USA) • Attendance to the JVT Meeting (October). • Presentation of a paper on the Gateway at the Telecom I+D Conference (Valencia, Spain) • Dissemination of results to Spanish Administration authorities (Ministerio de Educación) • Attendance to the JVT Meeting (January) • Contribution to Deliverable D.7.1.4. • Dissemination of results to Spanish companies (Alcatel-Lucent, Ericsson) • Dissemination of results to Spanish companies. • Dissemination of results to a delegation of Chinese universities. • Support of international affairs and cooperation

1.9.2 Major Cost

Items	Description	Cost
Labour Costs	• person/month spent on the project during period: 20.7	173,851.86€
Equipment	• Monitor LCD 52’’	2,265.90€

(Depreciation)	• Portable computer • Small Camera • Portable computer (4) • Printer • External disks (4) • Core2Quad computer (2) • Wireless router and adapters	1,417.74€ 163.84€ 3,623.52€ 480.99€ 292.15€ 1,048.59€ 991.25€
Travel	• ICT Coordination Meeting Brussels, February 2007 • SUIT Audit Meeting Brussels, March 2007 • SUIT Project Meeting Paris, June 2007 • JVT Meetings Geneva, July 2007 • IEEE VTC Conference, September 2007 • SUIT Project Meeting Munich, November 2007 • SUIT Project Meeting Israel, September 2007 • SUIT Integration Meeting Aveiro, December 2007 • SUIT Integration Meeting Aveiro, January 2008 • SUIT Integration Meeting Aveiro, February 2008 • SUIT Audit Meeting Vilamoura, April 2008	1,846.61€ 2,026.06€ 1,569.29€ 827.14€ 1,441.99€ 531.48€ 1,422.88 € 373.57€ 543.45€ 870.93€ 1,036.63€
Consumables	• Network and Electrical Cables (1) • Network and Electrical Cables(2) • Network and Electrical Cables (3) • Batteries and adapters	1,783.08€ 1,229.36€ 1,136.04€ 268.34€
Audits		1,750.00€
	Total	202,792.69€

1.10 WAVECOM – Soluções Rádio Lda (Wavecom)

1.10.1 Work Performed

WP	Contributions
WP1	• DVB-T preliminary field tests at 140km/h to assess DVB-T network capacity
WP5	• Implementation of Linux Gateway. Market search of cheap Pentium cards • Implementation of Linux based Gateway. Target price less than 100 euros • Building Profile construction • Testing and evaluating the modems included in the Building Profile (see Deliverable D5.11) • Editor and contributor to deliverable D5.9 • Contributor to deliverable D5.7
WP6	• Integration work for demonstration at first review • Market search for 2.5 power amplifiers • Ordering two 70 Mbps (TDD) radio links • Redesign IP addresses and infrastructure for field trials • Elaboration of a design solution for 2.5 GHz TDD Power Amplifier for WiMAX • Configure two 70 Mbps (TDD) radio links to connect the playout to the BSTs • Install and test two 70 Mbps (TDD) radio links to connect the playout to the BSTs • Intensive testing of different 802.11 APs and Receivers and selection. • Ordering and programming the APs to be used in SUIT demo • Replacement of all cables connection the WiMAX BSTs to the antennas by very low loss ones • Selecting, ordering and programming a new network switch • Pointing the emitter antennas to ensure the correct HO
WP7	• Analyse of two possible solutions for SUIT booth to be used in technologic expositions • Grabbing and editing HD video for the demo

1.10.2 Major Cost

Items	Description	Cost
Labour Costs	• person/month spent on the project during period: 18.7	207,664.08€
Travel	• SUIT Integration Meeting Madrid, February 2007 • SUIT Project Meeting Ghent, March 2007 • SUIT Project Meeting Israel, September 2007 • SUIT Project Meeting Munich, November 2007	294.48€ 736.47€ 1,101.89€ 820.57€
Equipment	• 3x PC DI Intel D 915 2.8GHZ, HDD (CPCDI) • 3x PC DELL	423.74€ 786.59€
Consumables	• 1x Switch 4200 26-Port • 4 x 32 BIT PCI GIGABIT NETWORK Interface Card • 6 x Network card PCI Intel 10/100/1000Mbps • 200m x Cable LMR-400 • 1 x Access Point • 2 x Motorola PtP links • 4 x Placas Aphelion • 1x Switch 4200 26-Port • 2 x USB Wireless N adapter • 2 x Wireless-N USB adapter • 1 x Switch 4200 26-Port • 2 x Antenas MTI ref. MT-485028/N	218.98€ 44.80€ 191.82€ 198.00€ 68.41€ 22,868.20 312.61€ 215.19€ 121.69€ 111.06€ 198.68€ 84.70€
Other Costs	• Adjustment on previous period(s)	-3790.30€
Total		236,461.95€

1.11 Med Cap Technologies, SA (MCT)

1.11.1 Work Performed

WP	Contributions
WP6	• Contributions for the definition of the metrics • Contribution to the Testing Metrics • SUIT terminal development work • Contribution for the deliverable D6.1 • Prepare the different elements required for the Test-bed/Field Trials • Elaboration of the deliverable D6.3 • Prepare the different elements required for the Field Trials • Preparation and coordination of the test-bed meeting in IT, Aveiro. Installation on the both sites the required infra structures (towers, shelters, cables and antennas) in order to receive all the active equipment (Base Stations, Power Amplifiers, LAN Switches) • Coordination of the integration meeting in IT, Aveiro. Wimax HO tests in laboratory. Set up off the IT site with DVBTRCT and Wimax equipment • Lab tests integration process. Elaboration of the deliverable SUIT_438_WP6_D&.3_Test_bed_report • First field tests campaign has been conducted • Several field tests and measurement campaigns have been conducted • Measurement campaigns. Elaboration of the deliverable WP6_D6.4_Field_trials_report
WP7	• Reading and studying of Mobile TV market survey in order to identify trends that could help SUIT partners on exploitation plans development • Contributions to the D7.1.3 TIP (Technology Implementation Plan) • Contributions to the Exploitation plan and TIP

1.11.2 Major Cost

Items	Description	Cost
Labour Costs	• person/month spent on the project during period: 17.4	158,143.74€
Travel	• SUIT Project Meeting Munich, November 2007 • SUIT Project Meeting Israel, September 2007 • SUIT Integration Meeting Aveiro, January 2008 • SUIT Integration Meeting Aveiro, January 2008 • SUIT Project Meeting Vilamoura, April 2008	2,600.00€ 2,500.00€ 1,000.00€ 800.00€ 1,600.00€
Total		166,643.74€

1.12 Budget versus Actual Costs

Cost Budget Follow-up Table ***) total budget figures - not EC funding**

Contract N°: 28042 **Acronym:SUIT** **Date: 11/4/2008**

PARTI-CIPANTS	TYPE of EXPENDITURE (as defined by participants)	BUDGET	ACTUAL COSTS (EUR)					Pct. spent	Remaining Budget (EUR)
			Period 1	Period 2	Period 3	Period 4	Total	Total	
		e	a1	b1	c1	d1	e1	a1+b1+c1+d1/e	e-e1
Part. 1-IT	**Total Person-month**	**67**	33.729	36			**69.729**	104%	**-2.729**
	Personnel costs	**633150**	318,739.05	340200			**658939.05**	104%	**-25789.05**
	Equipment						**0**	0%	**0**
	Consumables						**0**	0%	**0**
	Travel	**14714**	6200	9050			**15250**	104%	**-536**
	Hosting meetings						**0**	0%	**0**
	Audit certificates	**1500**		3000			**3000**	200%	**-1500**
	Third Party						**0**	0%	**0**
	Others costs						**0**	0%	**0**
	Total Costs	**649364**	**324939.05**	**352250**	**0**	**0**	**677189.05**	**104%**	**-27825.05**
Part. 2- IBBT	**Total Person-month**	**50**	16.166	34.95			**51.116**	102%	**-1.116**
	Personnel costs	**341722**	61295.92	222721.8			**284017.72**	83%	**57704.28**
	Equipment	**5000**	1821.4	2926.992			**4748.392**	95%	**251.608**
	Consumables	**500**	234	1218.54			**1452.54**	291%	**-952.54**
	Travel	**12671**	3920.91	15747.876			**19668.786**	155%	**-6997.786**
	Hosting meetings						**0**	0%	**0**
	Audit certificates	**2000**		1950			**1950**	98%	**50**
	Third Party						**0**	0%	**0**
	Others costs						**0**	0%	**0**
	Total Costs	**361893**	**67272.23**	**244565.2**	**0**	**0**	**311837.44**	**86%**	**50055.56**
Part. 3- URL	**Total Person-month**	**42**	24	31.40			**55.4**	132%	**-13.4**
	Personnel costs	**207900**	71042.46	116836.94			**187879.4**	90%	**20020.6**
	Equipment			45.06			**45.06**	#DIV/0!	**-45.06**
	Consumables						**0**	0%	**0**
	Travel	**15204**	7287.14	15197.80			**22484.94**	148%	**-7280.94**
	Hosting meetings	**1000**	436.8				**436.8**	44%	**563.2**
	Audit certificates			1425.00			**1425**	#DIV/0!	**-1425**
	Third Party						**0**	0%	**0**
	Others costs			545.22			**545.22**	#DIV/0!	**-545.22**
	Total Costs	**224104**	**78766.4**	**134050.0**	**0**	**0**	**212816.42**	**95%**	**11287.58**
Part. 4-R&S	**Total Person-month**	**23.5**	11.35	14.75			**26.1**	111%	**-2.6**
	Personnel costs	**430884**	207186.36	269121.7			**476308.06**	111%	**-45424.06**
	Equipment						**0**	0%	**0**
	Consumables	**2000**	17340				**17340**	#REF!	**-15340**
	Travel	**10355**	5327.4	1857.51			**7184.91**	69%	**3170.09**
	Hosting meetings						**0**	0%	**0**
	Audit certificates	**3356**		2948			**2948**	88%	**408**
	Third Party						**0**	0%	**0**
	Others costs			198.72			**198.72**	#DIV/0!	**-198.72**
	Total Costs	**446595**	**229853.76**	**274125.9**	**0**	**0**	**503979.69**	**113%**	**-57384.69**
Part. 5-UniS	**Total Person-month**	**44**	27.6	18.7			**46.3**	105%	**-2.3**
	Personnel costs	**316800**	112257.79	173073.55			**285331.34**	90%	**31468.66**
	Equipment						**0**	0%	**0**
	Consumables	**1000**	486.9	1412.75			**1899.65**	190%	**-899.65**
	Travel	**11150**	6938.59	9190.25			**16128.84**	145%	**-4978.84**
	Hosting meetings	**4000**	3220.52				**3220.52**	81%	**779.48**
	Audit certificates			2567.39			**2567.39**	#DIV/0!	**-2567.39**
	Third Party						**0**	0%	**0**
	Others costs		62.3	62.3			**124.6**	#DIV/0!	**-124.6**
	Total Costs	**332950**	**122966.1**	**186306.24**	**0**	**0**	**309272.34**	**93%**	**23677.66**

Part. 7- Runcom	**Total Person-month**	**73.5**	40.57	45.91			**86.48**	118%	**-12.98**
	Personnel costs	**735000**	308,284	383134			**691418**	94%	**43582**
	Equipment	**50000**	24733				**24733**	49%	**25267**
	Consumables			30594			**30594**	#DIV/0!	**-30594**
	Travel	**27788**	4730	11198			**15928**	57%	**11860**
	Hosting meetings						**0**	0%	**0**
	Audit certificates						**0**	0%	**0**
	Third Party						**0**	0%	**0**
	Others costs						**0**	0%	**0**
	Total Costs	**812788**	**337747**	**424926**	**0**	**0**	**762673**	**94%**	**50115**
Part. 8- IRT	**Total Person-month**	**30**	17.07	14.26			**31.33**	104%	**-1.33**
	Personnel costs	**416100**	225604.34	189915.93			**415520.27**	100%	**579.73**
	Equipment						**0**	0%	**0**
	Consumables	**308**	130	233			**363**	118%	**-55**
	Travel	**16000**	9283.47	5869.3			**15152.77**	95%	**847.23**
	Hosting meetings			2027.73			**2027.73**	#DIV/0!	**-2027.73**
	Audit certificates			1835			**1835**	#DIV/0!	**-1835**
	Third Party						**0**	0%	**0**
	Others costs			6684.5			**6684.5**	#DIV/0!	**-6684.5**
	Total Costs	**432408**	**235017.81**	**206565.46**	**0**	**0**	**441583.27**	**102%**	**-9175.27**
Part. 9- UPM	**Total Person-month**	**30**	19.3	20.7			**40**	133%	**-10**
	Personnel costs	**276000**	150498.49	173851.86			**324350.35**	118%	**-48350.35**
	Equipment	**2000**	2437.47	10283.98			**12721.45**	636%	**-10721.45**
	Consumables	**297**	511	4416.82			**4927.82**	1659%	**-4630.82**
	Travel	**10000**	6770.73	12490.03			**19260.76**	193%	**-9260.76**
	Hosting meetings						**0**	0%	**0**
	Audit certificates			1750			**1750**	#DIV/0!	**-1750**
	Third Party						**0**	0%	**0**
	Others costs						**0**	0%	**0**
	Total Costs	**288297**	**160217.69**	**202792.69**	**0**	**0**	**363010.38**	**126%**	**-74713.38**
Part. 10- Wavecom	**Total Person-month**	**30**	12.4	18.7			**31.1**	104%	**-1.1**
	Personnel costs	**208320**	72716.51	207,664.08			**280380.59**	135%	**-72060.59**
	Equipment	**8056**	15.64	1210.33			**1225.97**	15%	**6830.03**
	Consumables	**35000**		24634.14			**24634.14**	70%	**10365.86**
	Travel	**17256**	2419.38	2953.41			**5372.79**	31%	**11883.21**
	Hosting meetings						**0**	0%	**0**
	Audit certificates						**0**	0%	**0**
	Third Party						**0**	0%	**0**
	Others costs						**0**	0%	**0**
	Total Costs	**268632**	**75151.53**	**236461.96**	**0**	**0**	**311613.49**	**116%**	**-42981.49**

Cost Budget Follow-up Table								*) total budget figures - not EC funding	
Contract N°:	28042	Acronym: SUIT					Date:	11/4/2008	
PARTI-CIPANTS	TYPE of EXPENDITURE (as defined by participants)	BUDGET	ACTUAL COSTS (EUR)					Pct. spent	Remaining Budget (EUR)
			Period 1	Period 2	Period 3	Period 4	Total	Total	
		e	a1	b1	c1	d1	e1	a1+b1+c1+d1/e	e-e1
Part. 11-MCT	Total Person-month	17		17.4			17.4	102%	-0.4
	Personnel costs	199750		158143.74			158143.74	79%	41606.26
	Equipment						0	0%	0
	Consumables						0	0%	0
	Travel	8300		8500			8500	102%	-200
	Hosting meetings						0	0%	0
	Audit certificates						0	0%	0
	Third Party						0	0%	0
	Others costs						0	0%	0
	Total Costs	208050	0	166644	0	0	166643.74	80%	41406.26

1.13 Person-Months Status Table

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[redacted]

1.14 Major Deviations

The following tables are copied from the 9th Quarterly Management Report.

Current Overall Planned Manpower – All project duration - Annex I

Originally Planned Human Resource Allocation – Annex I of the Contract										
Partner	**Short Name**	**WP0**	**WP1**	**WP2**	**WP3**	**WP4**	**WP5**	**WP6**	**WP7**	**Total**
P01	IT	17.000	5.000	11.000	17.000	7.000	5.000	2.000	3.000	**67.000**
P02	IBBT	0.000	6.000	0.000	28.000	9.000	0.000	5.000	2.000	**50.000**
P03	URL	0.000	3.000	0.000	0.000	27.000	0.000	9.000	3.000	**42.000**
P04	R&S	0.000	4.500	0.000	0.000	6.000	0.000	11.000	2.000	**23.500**
P05	UniS	0.000	6.000	18.000	14.000	3.000	0.000	0.000	3.000	**44.000**
P06	VITEC	0.000	5.000	0.000	5.000	0.000	26.000	4.000	4.000	**44.000**
P07	RUNCOM	0.000	6.000	15.000	0.000	0.000	30.000	16.500	6.000	**73.500**
P08	IRT	0.000	11.000	4.000	0.000	5.000	0.000	8.000	2.000	**30.000**
P09	UPM	0.000	4.000	7.000	6.000	0.000	10.000	0.000	3.000	**30.000**
P10	WAVECOM	0.000	4.000	9.000	0.000	0.000	5.000	10.000	2.000	**30.000**
P11	MCT	0.000	0.000	0.000	0.000	0.000	0.000	15.000	2.000	**17.000**
Total		**17.000**	**54.500**	**64.000**	**70.000**	**57.000**	**76.000**	**80.500**	**32.000**	**451.000**

Cumulative Expenditure of Manpower – All project duration

Spent Human Resource Allocation – Cumulative										
Partner	**Short Name**	**WP0**	**WP1**	**WP2**	**WP3**	**WP4**	**WP5**	**WP6**	**WP7**	**Total**
P01	IT	17.348	5.013	10.924	16.9	6.544	5.1	4.4	3.5	69.729
P02	IBBT	0	4.833	0	35.05	4.233	0	5	2	51.116
P03	URL	0	3	0	0	27.49	0	19.99	4.92	55.400
P04	R&S	0	5.25	0	0	7.95	0	12.2	0.7	26.100
P05	UniS	0	5.1	20.7	14.1	3.7	0	0	2.7	46.300
P06	VITEC	0	4.331	0	4.997	0	29.664	5	3.999	47.991
P07	RUNCOM	0	6.75	19.2	0	0	31.01	24.6	4.92	86.480
P08	IRT	0	9.32	3.17	0	5.3	0	13.47	0.72	31.980
P09	UPM	0	5	7	6.5	0	18.5	0	3	40.000
P10	WAVECOM	0	4.9	7.45	0	0	6.05	10.1	2.6	31.100
P11	MCT	0	0	0	0	0	0	15.4	2	17.400
Total		17.348	53.497	68.444	77.547	55.217	90.324	110.16	31.059	503.596

Planned Human Resource Allocation – 2nd period

Originally Planned Human Resource Allocation– Reporting Period										
Partner	**Short Name**	**WP0**	**WP1**	**WP2**	**WP3**	**WP4**	**WP5**	**WP6**	**WP7**	**Total**
P01	IT	9.452	0.668	1.336	12	2.113	3	1.37	2.182	**32.121**
P02	IBBT	0	3	0	6.988	4.8	0	4.5	1.7	**20.988**
P03	URL	0	0	0	0	5.66	0	8.14	2.7	**16.5**
P04	R&S	0	0.75	0	0	1.5	0	9	2	**13.25**
P05	UniS	0	0	3	8.7	3	0	0	3	**17.7**
P06	VITEC	0	1.008	0	0.008	0	10.4	2.726	3	**17.142**
P07	RUNCOM	0	1.008	1	0	0	21	12.5	4.431	**39.939**
P08	IRT	0	1.333	1.336	0	0.364	0	5.258	1.7	**9.991**
P09	UPM	0	0	0	3.8	0	5.901	0	2.8	**12.501**
P10	WAVECOM	0	0.34	0	0	0	4.15	9.8	2	**16.29**
P11	MCT	0	0	0	0	0	0	15	2	**17**
Total		**9.452**	**8.107**	**6.672**	**31.496**	**17.437**	**44.451**	**68.294**	**27.513**	**213.422**

Cumulative Expenditure of Manpower – 2nd period

Actually Spent Human Resource Allocation– Reporting period										
Partner	**Short Name**	**WP0**	**WP1**	**WP2**	**WP3**	**WP4**	**WP5**	**WP6**	**WP7**	**Total**
P01	IT	9.8	1.2	1.5	12	2.2	3	3.6	2.7	**36**
P02	IBBT	0	2.1	0	25.85	0	0	5	2	**34.95**
P03	URL	0	0	0	0	7.39	0	19.19	4.82	**31.40**
P04	R&S	0	0	0	0	3.3	0	10.75	0.7	**14.75**
P05	UniS	0	0	3.7	8.8	3.7	0	0	2.5	**18.7**
P06	VITEC	0	0	0	1	0	17	5	3	**26**
P07	RUNCOM	0	0	0.2	0	0	22.06	20.6	3.05	**45.91**
P08	IRT	0	0.42	2.53	0	1.06	0	9.7	0.5	**14.2**
P09	UPM	0	0	0	4.3	0	13.6	0	2.8	**20.7**
P10	WAVECOM	0	0.9	0	0	0	5.2	10.0	2.6	**18.7**
P11	MCT	0	0	0	0	0	0	15.4	2	**17.4**
Total		**9.8**	**4.62**	**7.93**	**51.95**	**17.65**	**60.86**	**99.24**	**26.67**	**278.72**

1.14.1 Deviations from Person-Month Budget

The total planned PM was 240.655 PM and the actual spent was 222.676 PM. The deviation is less than 10%. In the second period, the total estimation is 213.4 PM and the actual spent is 269 PM. This deviation in the second reporting period was a consequence of more PM required by IBBT, URL and UPM. Therefore, the major deviations from the initial planned human resources are justified down.

WP0
This WP presents no major deviations.

WP1
This WP presents no major deviations.

WP2
This WP presents no major deviations.

WP3
This WP presents a deviation. First, Activities 3.1 and 4.2 were extended till M18. Second, any leftover resources from Activity 3.1 were transferred to Activity 3.2 while any leftover resources from Activity 4.2 were transferred to Activity 3.3. Both changes were approved by the project board. The reason for the extensions and shift in resources is due to the fact that SVC standardization in MPEG has been suffering some delay thereby partially halting IBBT's work in WP3 for the first period. Also part of the FGS work had to be redone for CGS in the second period due to the removal of FGS from the final SVC standard. In A4.2, IBBT needed to invest more time in evaluating the best way of extracting SNR (Signal-to-Noise Ratio) figures from the CPE (receivers) and its mapping into MPEG-21 terminal descriptors.

WP4
This WP presents deviations. URL presents a deviation due to the enhancement of the management system, much more complete than the initially planned version.

WP5
This WP presents some deviations. UPM has been the key partner engaged in Gateway design and development, under WP5. As required for the integration of the demonstrator, UPM has contributed to that integration, specifically developing an ancillary prototype to run thorough tests which have helped to identify several problems related to the whole processing chain. In addition, UPM has attended the two integration meetings held during the period of this report. To fulfil these tasks, UPM requested and the PB approved to extend task 5.1 until the end of the project.
Concerning VITEC, deviation in WP5 from 10.4 up to 17.0 is due to the replacement of the FGS SNR scalability scheme by CGS after the withdrawal of FGS scalability by JVT from the SVC standard during winter 2006-2007.

WP6
This WP presents some deviations. URL presents a deviation in this WP due to several reasons: the late inclusion of multiple description audio transmission; the inclusion of constant bit-rate video, in addition to the variable bit-rate one; and the inclusion of a proxy module for internet access. All these have implied an extra effort in development, implementation and integration into the global chain.
Concerning VITEC, deviation in WP6 from 2.7 up to 5.0 is due to the efforts made to take in account audio digitalization in the live encoder and to stream the encoded streams over RTP in order to send them to SUIT platform.

WP7
This WP presents no major deviations.

1.14.2 Deviations from Cost Budget

IT
IT cost budget presents no major deviations.

IBBT
IBBT actual costs present a deviation. The budget item mainly responsible for the deviation was the human resources. IBBT spent less than planned. See the reasons in Section 1.13.1. It is expectable a peak of personnel costs in the first semester of the second period.

URL
URL cost budget presents no major deviations.

R&S
R&S cost budget presents no major deviations.

UniS
UniS actual costs present a deviation. The actual personnel costs depend on who is working on the project at the time. At the beginning of the project, UniS could not get enough research fellows to do the work, so UniS paid PhD students instead. Obviously, PhD student cost less than research fellow.

Vitec
Vitec cost budget presents no major deviations.

RUNCOM
RUNCOM cost budget presents no major deviations.

IRT
IRT cost budget presents no major deviations.

UPM
UniS actual costs present a small deviation. This is a consequence of what was explained in Section 1.14.1.

Wavecom
Wavecom cost budget presents no major deviations.

MCT
MCT cost budget presents no major deviations.