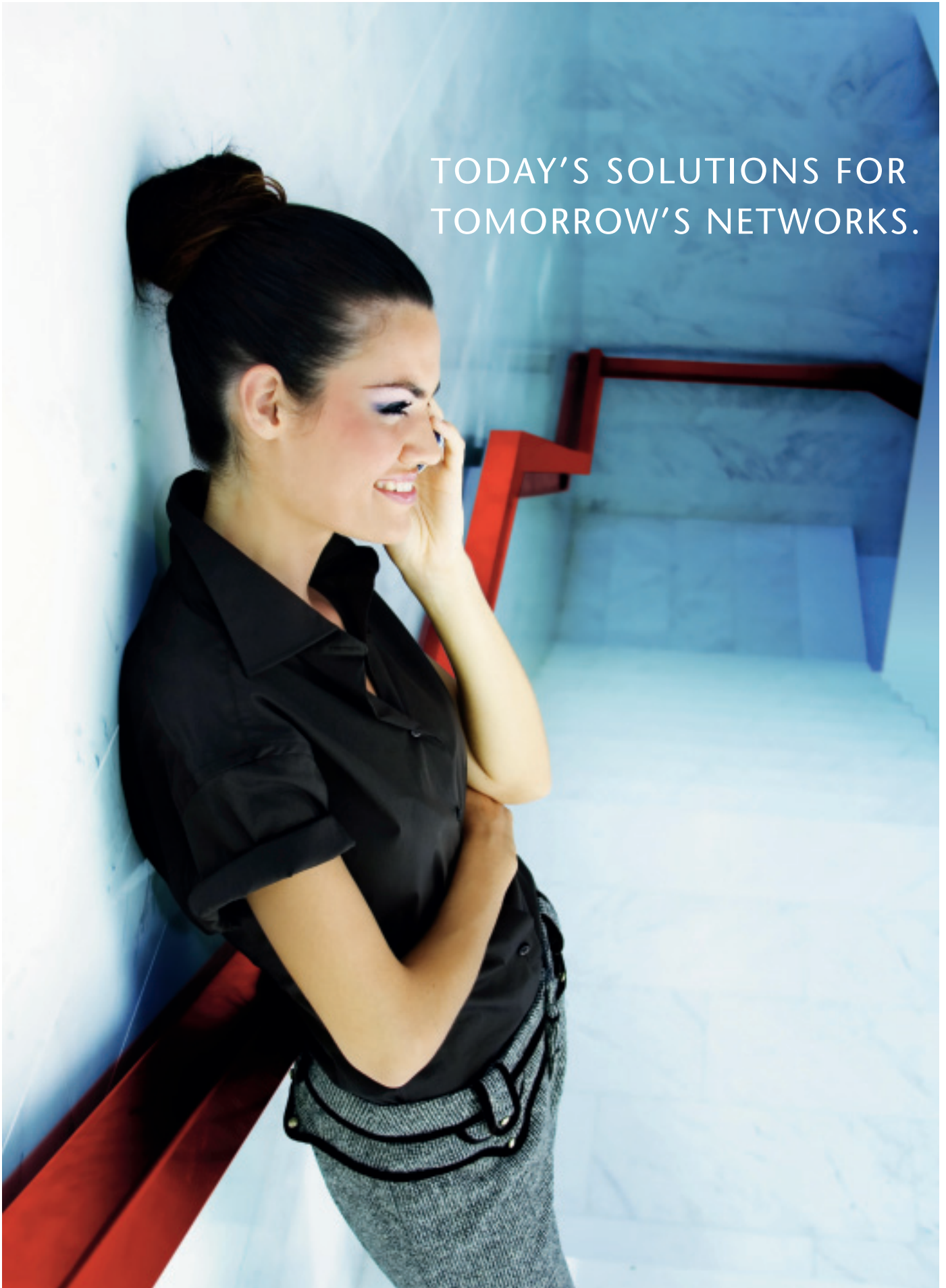




TODAY'S SOLUTIONS FOR  
TOMORROW'S NETWORKS.



“IP Multimedia Subsystem (IMS) will become the dominant architecture to deliver VoIP by 2010”

Source: Gartner Group, October 2006

“THOR™ is IMS-ready”



FOR MORE INFORMATION PLEASE CONTACT OUR SALES TEAM

SPEECH DESIGN Carrier Systems GmbH  
Industriestr. 25a . 22880 Wedel . Germany  
Fon +49 (0) 4103.91 42-0  
Fax +49 (0) 4103.91 42-200  
E-mail [info@cs.speech-design.de](mailto:info@cs.speech-design.de)  
or visit our website [www.speech-design.de](http://www.speech-design.de)

---

## CONNECT TO THE FUTURE WITH THOR™ MESSAGING SOLUTIONS

THOR™ is the next generation voice and video application platform from SPEECH DESIGN, Europe's leading provider of value-added solutions for enterprise and public networks.

THOR™ spans the full range of today's and tomorrow's converged networks and applications, from 2G and 2.5G to 3G and IMS, from wireline to wireless, from voice-only to multimedia, thus granting carriers unprecedented flexibility to create a customer-centric, open environment of innovative service offerings.

The open standard based THOR™ architecture was first introduced in 2001 and has since been implemented in many service configurations by major international carriers, while being constantly improved and expanded. It offers carriers a new, yet proven technology, greatly reducing early adopter risks.

With the rise of new standard protocols like VoiceXML and network technologies like IMS, this modular and flexible platform is ready for any challenge: new software modules are easily added to the THOR™ interface framework.

THOR™ systems are globally deployed and supported by SPEECH DESIGN's partner network of leading system integrators.

---

### TABLE OF CONTENTS

VOICE AND VIDEO CALL COMPLETION SOLUTIONS Complete the value chain	■ 4 - 5
NEXT GENERATION MESSAGING Get ready for tomorrow	■ 6 - 7
MESSAGE CENTER SOLUTIONS Bring SMS and MMS to the wireline world	■ 8
INTERACTIVE VIDEO AND MUSIC Entertain and play	■ 9
THOR™ IVR - INTERACTIVE VOICE AND VIDEO PLATFORM Get the customer dialogue going	■ 10
ABOUT SPEECH DESIGN Choose the partner who understands	■ 11
CONTACT US	■ 12



## COMPLETE THE VALUE CHAIN

### HOW TO TURN LOST CALLS INTO REVENUE?

THOR™ offers a full suite of Call Completion services for voice and video calls designed to significantly reduce the number of unsuccessful connections.

## VOICE CALL COMPLETION

### | BENEFITS

More than 40% of mobile-terminated calls are not connected because the called party is not available, does not answer the phone or is busy. The basic idea behind Call Completion services is to detect calls where one party (A) could not reach another party (B) for whatever reason and to facilitate subsequent Call Completion.

THOR™ Call Completion solutions enable carriers to increase ARPU by boosting overall Call Completion rates. Both registered voice/video mail users and non-voice/video mail users benefit from seamless communications and improved reachability. Depending on the service setup, the different Call Completion options can be activated on a call-by-call basis or permanently for a given subscriber.

### | FEATURES

#### NOTIFY B

The caller is asked if he wishes to be called back when the called party becomes available again. If yes, the regular “lost-call-SMS” is expanded by an explicit call-back request. This service can be used both for non-voice mail users and existing voice mail subscribers.

#### NOTIFY A

The caller is asked if he would like to be notified when the called party becomes reachable again. The caller receives a notification SMS with the called party number for immediate one-button call back. Deployments have shown that “Notify A” significantly increases voice traffic and revenue especially from interconnect charges and additional resulting calls.

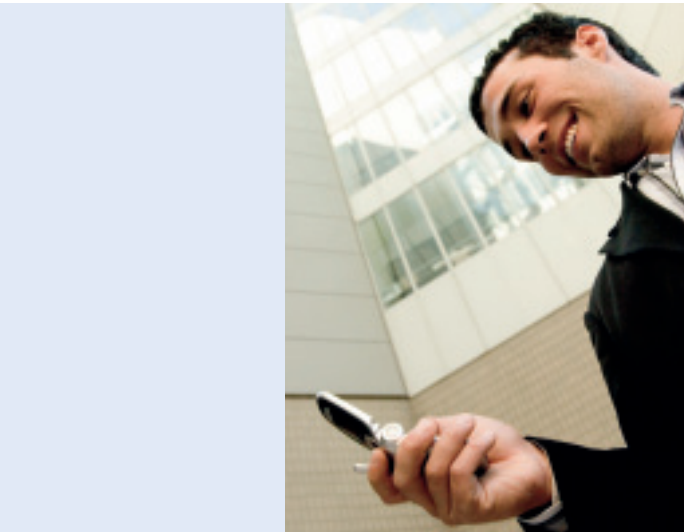
#### CALL BACK AFTER BUSY

The caller can opt to be automatically connected when a busy called party becomes reachable again. The caller and then the called party receive a notification phone call from the service and are connected as soon as both have picked up.



#### NOTIFY A

An SMS notifies the caller as soon as the called party becomes available.



## VOICE MAIL TO MMS

The calling party can leave a message in a temporary voice mailbox created on the Call Completion platform. The voice message is “pushed” to the called party via MMS. This concept offers significant user benefits: voice mails are listed in the standard message inbox including the caller’s name if listed; the user can recognize important messages at a glance and listen to them “on-the-spot” with no need to call the voice mail system.

## PERSONALIZED MESSAGES

Call Completion provides user-recordable individual messages offering options to callers, rather than “generic” system messages.

## INTEGRATED MESSAGE CENTER

Every THOR™ Call Completion system is equipped with a complete internal SMSC and MMSC for notification. Alternatively, external message gateways can be connected through a number of standard interfaces.



**NO DEAD END - GIVE OPTIONS**  
 THOR™ offers suitable options to the caller in an intuitive video menu.

## VIDEO CALL COMPLETION

### BENEFITS

Video calls are even more likely to fail to connect than voice calls: the called party might not have 3G coverage or a video-capable phone, callers might be reluctant to leave a video message, etc ...

THOR™ Video Call Completion exceeds the functionality of both Voice Call Completion and Video Mailbox (see "Next Generation Messaging"). It offers caller-friendly options especially designed to boost the completion rate of video calls.

### ADDITIONAL VIDEO FEATURES

#### VISUAL USER INTERFACE

Video Call Completion presents the caller with a visual interface, offering a choice of convenient options:

- leave a message,
- be notified when the called party becomes available,
- request to be called back,
- switch to a voice call.

#### 3G-TO-2G (VIDEO TO VOICE)

If the called party has a 2G phone or no 3G network coverage, a video call from a 3G user can be transformed and connected as a 2G audio call (without this capability, the caller would have to hang up and re-initiate the call as a voice call).

#### VIDEO MAIL TO MMS

After an unsuccessful video call the calling party has an option to leave a video message in a temporary mailbox. The message is “pushed” to the recipient’s handset via MMS. If network or MMSC has limited MMS size capabilities, WAP-Push delivery can be done instead.



### GET READY FOR TOMORROW

HOW TO INTEGRATE NEW VOICE AND MULTIMEDIA SERVICES INTO TODAY'S INFRASTRUCTURE?

THOR™ Next Generation Messaging platform offers carriers the advantages of an open architecture, innovative services and a smooth integration into the existing infrastructure. It connects easily to any network, whether based on SS7, SIP, ISDN or the emerging IMS standard. Carriers are free to use THOR™ either as a functional add-on, a parallel system (for premium or new subscribers) or a full-scale replacement of the legacy voice mail system. THOR™ provides multiple concurrent services on a single platform. Operators can easily scale up to an unlimited number of users, ports and services.





**BENEFITS**

The ability to implement new value-added services on a single multifunctional platform helps carriers to significantly reduce their capital and operating expenditures. They are free to choose any combination from a large portfolio of services and to expand both in size and functionality according to market demands.

The simple integration of additional services into an existing THOR™ environment results in short time-to-market cycles for innovative applications, enabling carriers to proactively address their customers' needs.

inbox-design is very similar to a well known email-inbox/outlook-design and therefore offers much better usability and one click access to selected messages. The inbox displays multiple messages containing sender number or name, message type, status, date, time and duration in an overview window which replaces the legacy main menu.

**FEATURES**

**ADVANCED VOICE MAIL**

The THOR™ platform has been deployed in many “basic voice mail”, “unified messaging” and “next generation voice mail” configurations, including multi-site, multi-million-users installations. The open, standard based architecture supports all state-of-the-art requirements on a modern messaging system, including multiple notification options, instant on-demand temporary mailboxes, etc. All THOR™ services operate with a standard multimedia message store (in many cases, the carrier’s existing email store), making it simple to work across media boundaries.

In the following, only incremental video components of an advanced multimedia messaging service are described.

**VOICE/VIDEO MAIL TO MMS**

Voice and video mails can be delivered as a multimedia message to any MMS-capable device. The THOR™ system “pushes” the messages straight to the recipients mobile via MMS. The message can be handled (playback, answer, forward, etc.) like any other MMS, creating a seamless and fun-to-use communications environment.

**INSTANT VIDEO MAILBOX**

If the called party has no Video Mailbox, a temporary mailbox for all uncompleted video calls is created. The user has basic functionality but can change the temporary box into a permanent full-featured Video Mailbox by just one click.

**PERSONAL VIDEO GREETINGS**

Users can easily customize their mailbox greetings by including avatars or pre-stored video sequences and adding music and background themes. Greetings can also vary depending on the time of the day or the identity of the caller.

**VIDEO MAILBOX**

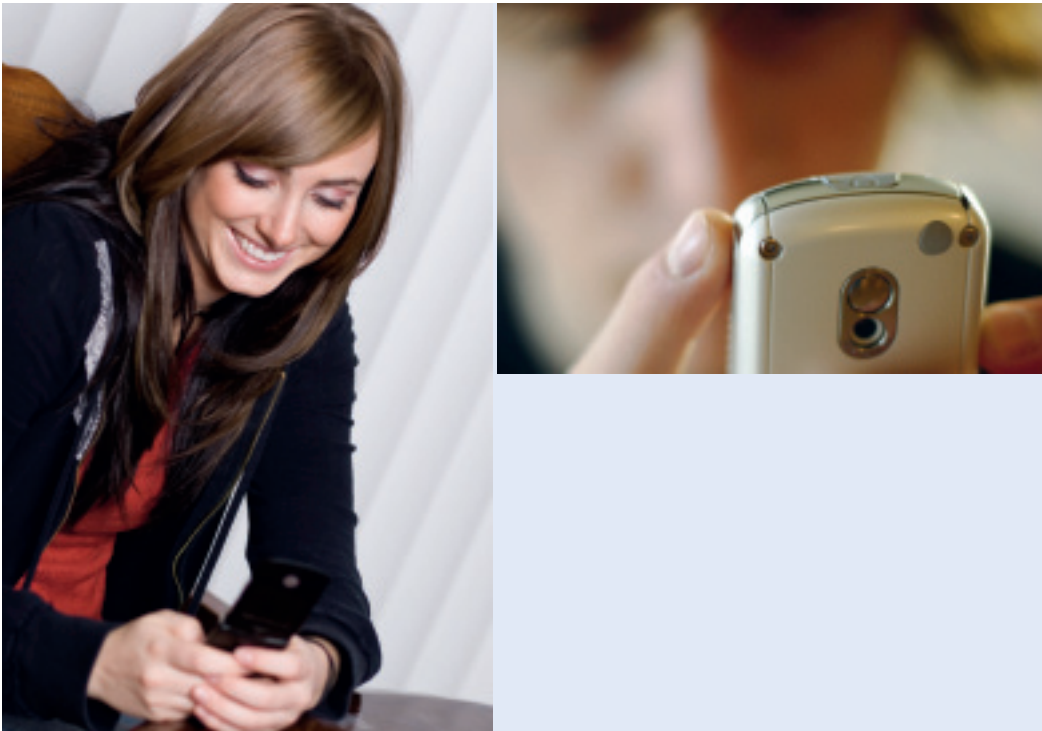
Video Mailbox features a multimedia inbox for any message type (SMS, MMS, IM or Video Call). The service generates a “live” video session on the handset with variable content during runtime (no special handset software required). Instead of the “plain old voice mail” concept with message queue browsing “next message”, THOR™ Video Mailbox uses a dynamic user interface with an “inbox view” design. The



**VIDEO MAILBOX**

*Received voice and video mail messages can be handled through an interactive touch tone controlled user menu.*

*User response options include single-key video call-back, reply by MMS and others.*



### BRING SMS AND MMS TO THE WIRELINE WORLD

#### HOW TO INCREASE THE REACH OF SMS AND MMS

THOR™ message center solutions bridge the gap between wireless and wireline networks. Incremental fixed-to-fixed, fixed to-mobile and mobile-to-fixed traffic boosts network revenue, providing a gateway to future high-growth applications. Operators immediately benefit from incremental traffic revenue and pave the way for future added value services.

#### | BENEFITS

For fixed-line carriers, THOR™ offers both SMSC and MMSC message center services. Operators gain additional revenues from premium-rate traffic between SMS enabled phones, from mobile/wireline termination as well as from delivery to legacy devices.

#### | FEATURES

##### SMS-TO-VOICE

With THOR™ SMS-to-voice, text messages can be sent to any fixed line telephone. SMS-capable recipient phones will display the message; on conventional phones, the message is read aloud using text-to-speech technology.

##### FIXED-LINE SMSC

The THOR™ fixed line SMSC (SMSC-F) features a gateway that delivers short messages from a fixed line SMS phone to any receiver. In addition, it includes intelligent fixed line device detection for delivering an SMS to either a legacy phone, an SMS capable phone, a fax machine or an answering machine.

##### FIXED-LINE MMSC

The THOR™ MMSC-F supports full interoperability between all fixed and mobile networks. With this approach, any telephone can immediately receive multimedia messages without the need for registration or provisioning. THOR™ automatically adjusts the MMS to the type of device it is sent to.



## ENTERTAIN AND PLAY

### HOW TO ENHANCE CALLS WITH VIDEO & MUSIC?

Operators generate incremental revenue streams by introducing new Interactive Video and Music applications. THOR™ provides a full range of value added applications and entertainment for gaming, interactive-TV and other related services.

#### | BENEFITS

With Interactive Video and Music, operators can offer customers emotional and “addictive” services, generating substantial revenue streams. Innovative video services further enhance the user experience. THOR™ Interactive Video and Music services can be delivered as a turnkey package, including backend, rights management and provisioning.

#### | FEATURES

##### VIDEO QUIZZ

Via video call, users can play a “live” trivia game with random questions. The application uses interactive and dynamic prompts, changing the look as the game progresses. No software download is necessary. Questions are generated from a live database and videos are rendered with templates in real-time. Features of the Video QUIZZ application include: automatically generated score cards and high score tables.

##### VIDEO TO TV

THOR™ interactive video services can be used for TV and broadcasting formats. Recording-based video services are suited for casting shows, video news delivery, video feedback or video voting. Live video services greet callers on an interactive video portal and offer a choice of options. The caller can then be connected to a live video either in “watch-only” or “fully interactive” mode.

##### RINGBACK TONES

While waiting for a connection, callers hear music individually chosen by the called party. To support caller orientation, ring tones can be heard along with the music.



##### VIDEO QUIZZ

*At the end of the quiz, a high score-table is presented, including the photos of the top players.*



## GET THE CUSTOMER DIALOGUE GOING

### HOW TO EFFICIENTLY LAUNCH INTERACTIVE MULTIMEDIA SERVICES

With THOR™ IVR you can now quickly create and deploy innovative voice & video services, beating the competition on cost-effectiveness and time-to-market.

#### | BENEFITS

THOR™ IVR is a modular standards-based carrier grade platform for interactive voice and video services. SPEECH DESIGN provides a full range of pre-packaged voice & video applications based on THOR™ IVR. With THOR™ IVR, you can now develop, deploy, control and customize any service with easy-to-use tools and technologies, bundled into a complete carrier-grade application lifecycle package.

#### | FEATURES

##### STATE OF THE ART ASR AND TTS SUPPORT

THOR™ IVR supports Automatic Speech Recognition (ASR) & Text to Speech (TTS) technologies of all leading vendors.

##### DYNAMIC VIDEO RENDERING

Dynamic Video Rendering technology allows real time (“on the fly”) rendering of any video content. The need of costly and time-consuming video production normally associated with prompt creation and maintenance is eliminated. THOR™ IVR generates a video stream containing dynamic elements like text, animations, photos, videos or icons during application runtime, resulting in unprecedented flexibility to create and modify video applications.

##### SERVICE CREATION ENVIRONMENT (SCE)

Quickly develop, test and deploy new services with standard web based technology like Java and .NET in an easy to use “point-and-click” editor.

##### SERVICE MANAGEMENT:

Adapt applications to specific customer needs without any development:

- Control the application features for every customer or user group
- Customize applications for MVNOs, other brands or major customers
- Enable customer based web provisioning
- Specify logging and billing of application services

THOR™ IVR is the ideal platform for services like

- Contact Centers
- Announcement Services
- Voice & Video Portals
- Interactive Video Services
- Hosted IVR Solutions

## CHOOSE THE PARTNER WHO UNDERSTANDS

SPEECH DESIGN is a leading European provider of multimedia messaging solutions. More than 100,000 companies and millions of individual users benefit daily from SPEECH DESIGN's added-value communications solutions delivered in cooperation with our partners: Europe's premier suppliers of enterprise and public networks. SPEECH DESIGN was founded in 1982 and is headquartered in Germany.

### | VISION

SPEECH DESIGN provides carriers with **FUTURE CONNECTED** intelligent messaging solutions: next generation technology for today's markets. Our convergent THOR™ platform delivers innovative value-added services across all networks, terminal devices and media types, creating a consistent user experience and expanding our customers' market reach.

### | REFERENCES



### | PARTNERS



THOR™ is highly modular and connects easily to different telephony front ends and media gateways. In conjunction with BASIS AudioNet's SARU platform, THOR™ provides state-of-the-art services for switched and VoIP networks, such as touch tone messaging, voice-controlled user interfaces and lawful interception.



For ISDN/E1-Connectivity THOR™ uses high-capacity Diva PRI/E1-30 boards from Dialogic. Multiple boards can be added to one system as soon as capacity needs grow.



THOR™ uses robust, high-performance mass storage subsystems from EMC in some very large multi-site voice messaging installations.



Within a strategic cooperation with Hewlett Packard, THOR™ solutions have been fully integrated with HP's OpenCall Media Platform (OCMP), enabling a rapid and secure deployment of scalable, high-density carrier-grade services. HP can also act as a general contractor/system integrator to deliver and support even most complex THOR™-based solutions internationally.



THOR™ uses the text to speech software Nuance Real-Speak™ to convert text into remarkably high quality speech to enhance messaging service such as email reading and SMS-to-wireline. The leading-edge speech recognition software Nuance Recognizer v9 integrated into THOR™-based IVR solutions drives higher business performance through more efficient speech solutions.



Solid Data Systems' best-of-breed solid-state disk (SSD) solutions improve the performance, data integrity and resiliency of mission-critical THOR™ applications, addressing the demands of high-volume, low-latency messaging transactions of our customers.





Carrier Systems GmbH



FUTURE CONNECTED

FOR MORE INFORMATION PLEASE CONTACT

SPEECH DESIGN Carrier Systems GmbH  
Industriestr. 25a . 22880 Wedel . Germany  
Fon +49 (0) 4103.91 42-0  
Fax +49 (0) 4103.91 42-200  
E-mail [info@cs.speech-design.de](mailto:info@cs.speech-design.de)  
or visit our website [www.speech-design.de](http://www.speech-design.de)

MASTHEAD

This is a publication of SPEECH DESIGN Carrier Systems GmbH  
Responsible for content is Jan Martens . Managing Director  
Printed by Hilmar Bee Graphischer Betrieb . Hamburg

© 2007 SPEECH DESIGN Carrier Systems GmbH . Wedel | All rights reserved