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## **Professional Summary**

Mr. Bress has over 30 years of experience in the telecommunications industry. His work experience covers a broad range of disciplines including the development of requirements and standards for digital (VoIP), mobile, and analog telephone equipment, network systems and interfaces, product design consulting, user interfaces engineering, developing and operating telecommunications testing laboratories including VoIP, mobile, and analog equipment, design and development of testing systems including hardware and software development, software architectures and database system design, database system management, software code development, hardware architectures and development, new telecommunications services development, and the delivery of telecommunications training seminars (US and internationally).

Mr. Bress has in-depth knowledge and experience with telecommunications protocols and systems including SS7/AIN (Advanced Intelligent Network), PSTN, VoIP, Unified Communications (UC), mobile, and IMS.

Mr. Bress has over 10 years of experience in intellectual property matters including expert consulting and witnessing for patent litigation (plaintiffs and defendants), patent prosecution, testifying in court, testifying in deposition, development of expert reports and declarations for infringement, non-infringement, validity, and invalidity, claim charts analysis, claim construction, inter partes review (IPR), ex parte and inter partes re-examination, and the development of intellectual property and the filing of patents. Mr. Bress also has litigation experience related to the Telecommunications Consumer Protection Act (TCPA).

Mr. Bress has extensive experience working with multi-national engineering teams in the telecommunications product development process from design conception, software and hardware architectures, prototyping, design testing, production, and quality assurance.

Mr. Bress has in-depth experience with technologies related to hearing loss including interfacing with hearing loss special interest groups, amplified telephone equipment developers, manufacturers and suppliers, hearing aid manufacturers, and audiologists. Mr. Bress was the prime contributor to the ANSI/TIA-4953 standard for amplified telephone performance and this work has included consulting and presentations to state (PUC) and federal (FCC) agencies focused on accessibility and equipment for the hearing impaired.

Mr. Bress was (and continues to be) the chief architect for the development of several complex telecommunications device test systems including hardware, software, user interfaces, system integration, and networking protocol interfaces.

Mr. Bress is the named inventor for patents issued while at Bellcore, AST, and as a private consultant. He is the author of many Bellcore requirements and recommendations documents and the prime contributor to many American National Standards Institute / Telecommunication Industry Association (ANSI/TIA) standards. Mr. Bress has provided leadership at TIA continuously starting in 1998, and he is currently serving as chairman of the TIA TR-41 engineering committee for communications products performance and accessibility standards development.

Mr. Bress is a cum laude graduate of the University of North Carolina with a BS in Electrical Engineering, and a summa cum laude graduate of the California Institute of Technology with a MS in Electrical Engineering.

## **Employment Summary**

Mr. Bress is currently the president of AST Technology Labs Inc. which he founded in 1995, providing product design consulting and testing services to internationally based customers including telephone service providers, product certification programs, and product and semiconductor manufacturers.

Prior to founding AST, Mr. Bress was employed from 1985 to 1995 at Bell Communications Research (Bellcore) as a Member of the Technical Staff (MTS) and Senior Systems Engineer. Mr. Bress's work at Bellcore was focused on new services development including prototype terminals (including smart phones) development, network signaling and protocols, operations, and features requirements, and the development and operation of telecommunications testing laboratories including hardware and software development.

Since 2005 Mr. Bress has been an expert consultant and expert witness for intellectual property litigation and prosecution cases.

## **Expertise**

- Voice Over IP (VoIP) Signaling and Features
- Digital Telephony Signaling and Features
- Mobile Telephony Signaling and Features
- Analog Telephony Signaling and Features
- Computer Telephony Devices
- Unified Communications (UC) Technologies
- Caller-ID Technologies
- Voicemail Systems
- Telephone Answering Machines
- Acoustics and Audio Technologies
- Amplified Telephones and Hearing Loss
- Communications Accessibility
- Telephone Feature Implementation
- Telephone and Gateway Testing
- Webcam Testing
- Video Set-Top-Box Testing
- Telecommunications Standards
- Telecommunications Network Architectures
- US Telecommunications Infrastructure
- Telecommunications Services Development
- IP (SIP / SDP, IMS)
- Advanced Intelligent Network (AIN)
- ISDN
- ADSL
- POTS
- Electronics and Control Systems
- Communications Protocols
- Test Systems Design and Development
- Analog and Digital Hardware
- Product Development Processes
- RF Communications
- Software Architectures and Development
- User interfaces design
- Database Systems Development and Management
- Systems Development and Integration
- Product Design Specifications Development

## **Education - University**

<u>Year</u>	<u>College or University</u>	<u>Degree</u>
1987	California Institute of Technology	M.S. Electrical Engineering (GPA: 4.0 / 4.0)
1985	University of North Carolina at Charlotte	B.S. Electrical Engineering (GPA: 3.6 / 4.0)

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## **Education - Other**

“Bellcore University” classes including:

- SS7 (Signaling System #7)
- Computer networking: Architectures
- Computer networking: Token Ring
- Computer networking: Ethernet / IP
- ‘C’ language programming (multiple classes)
- X.25 protocols
- OSI protocols
- ISDN
- Databases
- Multiple internal operations classes

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## **Professional Experience**

From: 2005  
To: Present  
Organization: James Bress  
Title: Expert Witness and Expert Consultant  
Summary: See separate section below: “Litigation and Intellectual Property Expert Experience”

From: 1995  
To: Present  
Organization: James Bress, Consultant  
Title: Engineering Consultant and Expert  
Summary: In addition to activities and responsibilities related to Mr. Bress’s position as President and CTO at AST Technology Labs Inc. (see below), Mr. Bress has been a contractor / consultant for projects which are summarized below.

- Summary of project responsibilities
  - Analysis of telecommunications standards to support the development of product performance specifications and the development of related testing systems.
  - Technical consulting for the development of detailed product performance specifications, and the design and development of advanced telephony device prototypes.
  - Systems development including system architecture design, software and hardware development, system installation and training.
  - Field troubleshooting and consulting for customer’s product issues.
  - Development of Intellectual Property (IP).
  - Development and delivery of technical training seminars regarding telecommunications product design and testing for North American and international customers.
- Projects highlights include:
  - VoIP telephone, gateway / Analog Terminal Adapter (ATA) test system.
    - Developed system architecture, hardware, software, and user interfaces including features for controlling and analyzing VoIP

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- sessions.
  - Integration and provisioning of system hardware components.
  - System features include control and analysis of:
    - SIP and SDP signaling for call set-up negotiation and signaling messages.
    - RTP for audio transmission and telephony event control.
    - Message headers, message field data, and message packet timing.
    - Analog port (FXS and FXO) signaling input/output.
  - Test system used for call set-up analysis, feature analysis (e.g., caller-ID, VMWI, voicemail), end-to-end signaling, timing variations, and much more.
- IMS (Internet Multimedia Subsystem) services.
    - Research and development of system designs and architectures for services delivery via IMS (Internet Multimedia Subsystem) based on 3GPP, IETF, and ITU standards and protocols including access, transmission, and billing.
      - Analysis of IMS architecture for the design of an audio enhancement feature.
      - Developed services concept for users connecting to an IMS network via SIP/SDP enabled devices to access service provided by application servers.
      - Application servers service logic used to enhance the audio of a VoIP session by inserting a custom media gateway feature in the media path to modify the audio based on the user's hearing impairment parameters.
      - Media gateway with added features to provide the audio enhancements applied to the speech signal coded in the transmission codec (voice coder).
    - Analysis and development of service delivery for mixed mode networks using IMS and AIN interfaces and components.
    - Analysis of service delivery to mobile devices including issues related to connections of the mobile circuit switched (CS) network to the IMS packet switched (PS) network.
    - Named inventor for US Patent No. 9,020,621 "Network Based Media Enhancement Function Based on an Identifier".
  - Microsoft's Skype for Business (fka: "Lync") device test lab.
    - Audio device testing program using AST's audio and acoustics test lab (see below).
    - Video camera test lab developed including integrating hardware, software, fixtures, and testing environment (controlled light room) for testing of video cameras (e.g. webcams).
  - Microsoft's "Response Point" IP-PBX system requirements and test lab.
    - Development of detailed performance and testing specifications, and the development of custom testing capabilities for each system component:
      - VoIP telephony devices (handset, headset, speakerphone).
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- VoIP gateways (FXO/PSTN and FXS/ATA-Analog).
  - System base controller (including SIP server, proxy, registrar, and voicemail server).
  - Microsoft's customer's installations troubleshooting and consulting.
  - Audio and acoustics telephony test lab.
    - Integration of hardware, software, test fixtures, and physical testing environments.
    - Standard/basic tests including frequency response, amplitude, volume control, noise, distortion, stability.
    - Advanced tests including terminal coupling loss (TCLw), echo cancellation (line and acoustic), noise suppression / cancelation, speech quality.
    - Anechoic room and semi-reverberant room test environments set up and qualified.
    - Speech recognition testing (e.g. Cortana) for multiple device types (laptops, tablets, etc.).
    - Subjective testing.
  - Thomson Consumer Electronics General Telephone Design Specifications
    - Drafted and updated complete library of Thomson's detailed feature, performance, and testing requirements provided to OEMs (1000's of pages).
    - Consulted with Thomson engineers and OEMs for product design details and testing requirements.
    - Comprehensive product performance testing services for Thomson's OEMs.
  - TSA-6000® telephone signal recording and analysis system.
    - Developed system architecture, hardware, and software including features for signal recording and DSP analysis and reporting of telephony signals, events, states, and protocols.
    - Design of feature-rich graphical user interfaces.
    - Ongoing project operations include the manufacture and sale of TSA-6000® systems which started in 2003.
    - Named inventor for U.S. Patent No. 7,076,031 "System and Method for Telephone Signal Collection and Analysis."
    - Human factors testing for user interfaces.
  - Automated Range Test (ART™) system.
    - Developed system architecture, hardware, software, and user interfaces.
    - System used to test the RF range of a cordless telephone by applying audio signals to the telephone's microphone (send path) and line (receive path) interfaces while varying the (simulated) distance between the cordless handset and its associated base.
    - Control of RF path attenuation using probes and computer controlled RF attenuators.
    - Separately analyze the telephone's transmit and receive audio signals in real time to determine a quality factor used to calculate when the simulated distance has caused the handset - base communications link to degrade below a configured threshold.
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