Gerald Smith

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Education:

B.S. Electrical Engineering (cum laude) Rose-Hulman Institute of Technology 1978
Post Graduate MSEE Candidate Studies, Rutgers University, NJ
George Mason University professional series for Project Management 2010 (PMI Certificate PMP #1,367,716). Renewed PMP certification in 2013, 2016 and 2019.

Key Attributes:

Mr. Smith (Senior Identity Consultant) is a Subject Matter Expert (SME) specializing in biometrics and smart card technology and solutions. Mr. Smith currently provides broad subject matter expertise and leadership to the Transportation Security Administration (TSA) Transportation Worker Identification Credential (TWIC®) Program Management Office (PMO). Mr. Smith has over forty (40) years of knowledge related to research, hardware and software system development and deployment of card solutions, solution components and card reader technology across the financial services, communications, health, and identification market segments. Mr. Smith is a recognized Intellectual Property (IP) litigation technical resource currently serving as an expert witness to the Department of Justice (DoJ) and was previously engaged by other Government Agencies including the Securities and Exchange Commission (SEC) and the Department of Homeland Security(DHS) as well as private entities. His extensive experience and knowledge encompasses payment and e-commerce solutions, biometrics identification, smart card specification & technology Standards, technology integration, user interface design, credential test and evaluation, user experience (human factors) testing, security and cryptographic techniques including certificate authorities and Public Key Infrastructure (PKI) best practices, smart card personalization policies inclusive of quality assurance internal controls, smart card production, market research and analysis, biometric enrollment best practices and direct involvement with multiple-application smart card deployments and credentialing best practices.

Mr. Smith is an active participant and technical writer/editor in biometrics and smart card technical standards bodies having previously served as Project Editor for the ISO/IEC Smart Card Interoperability Standard ISO/IEC 24727. He was a technical contributor to the NIST FIPS-201 “Personal Identity Verification” (PIV) standard and remains active in ISO/IEC JTC1 SC17 work groups, INCITS B10 and ANSI. Mr. Smith is an International Committee for Information Technology Standards (INCITS) Merit Award recipient and Team Award recipient. He is often a featured industry speaker; lecturing on identification solutions and credential topical matters in the U.S. and overseas.

Mr. Smith has direct coding/programming experience with various smart card, cell phone and computer operating systems including Android, Windows .NET, Java Card, and proprietary implementations of the ISO/IEC 7816 smart card standard. Mr. Smith has a lengthy industry participation history including various roles within the Secure Technology Alliance (STA). Mr. Smith served previously as technical contributor, board member and treasurer to GlobalPlatform® and was a previous board member to the Mobile Payments Forum.

Employment:

January 2012 – Present: Generic Smart Cards LLC (GSC)

Mr. Smith formed Generic Smart Cards LLC in 2012 to develop one-off credentialing solutions for clients with a focus on diagnostic and analysis tools for smart card issuers, smart card relying parties and cardholders. Other technical services, including acting as an expert witness, are offered as requested.

The GSC PC Windows-based Smart Card Diagnostic (SCD) application is considered by the smart card industry as best of breed with respect to smart card fault detection and performance analysis. This tool is used by several Government Agencies and commercial clients.

GSC has developed mobile smart reader applications since 2015 running on Android and Apple iOS platforms.

GSC has extensive Intellectual Property (IP) expertise gained from serving as a Government expert witness to multiple Government agencies and prior IP work for employers such as American Express. Smith has filed and been awarded several patents over his diverse and lengthy career.

July 2007 to Present: Identification Technology Partners, Inc. (IDTP) - Senior Consultant

Mr. Smith provides technical Subject Matter Expert (SME) support services to IDTP's federal and commercial clients including smart card application software system development, biometric standards advice, biometric authentication and biometric identification expertise, concept modeling, and programming. Mr. Smith is in his fourteenth year serving as SME to the Transportation Worker Identification Credential (TWIC) Program Management Office (PMO) for its secure biometric and smart card credentialing program deployment. The TWIC program is a large-scale government program that has issued over six million biometrically enabled smart card credentials to transportation workers. In his role as principle SME to the TWIC PMO, Mr. Smith provides technology integration support, continuous process improvement, facilitation and guidance in all technical aspects of the TWIC card's systems including; biometric authentication, biometric standards, physical and logical access control, technical specifications and documentation, card management system, card and system data models, support for any legal matters requiring an expert perspective, oversight of the Government Publishing Office (GPO) role as the TWIC system prime contractor for smart card production and issuance, and support to maritime stakeholders related to the operational performance management and measurement for quality assurance of the TWIC card in the field. Mr. Smith is the editor of the TWIC Hardware and Card Application Specification and has maintained the specification since its initial

publication. Mr. Smith is the technical project manager and application architect at the Department of Homeland Security (DHS) for mobile application hardware and software system development projects. Mr. Smith provided key stakeholder facilitation and was the architect and SME for the realization of the U.S. coast Guard (USCG) TWIC validation card set used by USCG field personnel to validate port and vessel TWIC reader operations used for physical access control into restricted areas within the regulated maritime infrastructure. Mr. Smith is the author of a portable card analysis tool desktop application solution that validates TWIC and other smart cards issued supporting Federal identification card specifications and Standards.

Mr. Smith is the thought leader responsible for the design and development of the Next Generation (NEXGEN) TWIC card specification and related documentation. NEXGEN TWIC provides advanced security features and enhanced functionality for maritime stakeholders. Mr. Smith additionally conceived and contributed to the development of a visual supplement utility known as the TWIC ADVISR™ mobile application (Android and iOS) which allows a smart phone operator to determine if a TWIC card is canceled without electrically reading the card. Mr. Smith regularly attends industry conferences as a representative of the TWIC PMO, where he presents technical credentialing best practices findings and solutions, program milestones and promotion of using emerging technologies to realize strong assurance with respect to Identity Verification.

2003 – 2007: SHARP Microelectronics of the Americas - Senior Business Development Manager / Senior Field Technical Manager

Provided senior subject matter expertise in the areas of smart card technologies and related solutions. Primary responsibilities included the engagement and support of key partners including the Department of Defense Common Access Card (CAC), contributor the Personal Identity Verification (PIV) Standard and an advisor to industry related to the emerging specification for the Transportation Worker Identification Credential (TWIC). Mr. Smith promoted the use of applications for the world's first 16-bit 1 mega-byte (MB) Java Card smart card platform, and engaged in performance management, *risk assessment*, as well as efforts to influence industry and market requirements for the benefit of the SHARP technical portfolio of associated components, products and solutions.

Mr. Smith was active in the design and development of the International Civil Aviation Organization (ICAO) electronic Passport (ePassport) Standard which represented a machine-readable biometric-enabled travel document. Mr. Smith helped develop a fingerprint minutiae-based Match-On-Card capability for the 1MB SHARP smart card. During his tenure, Mr. Smith served as a member of the Cards with Integrated Circuit standards body ISO/IEC JTC1 SC17 working groups WG4 and WG10. He was project editor for the ISO/IEC 24727 Part 1 standard for the architecture of interoperable smart card environments. Mr. Smith remains an active member of the ANSI INCITS B10 smart card standard body which included a vice-chair position to the B10.9 working group concerned with the national standardization of the Government Smart Card Interoperability Specification (GSC-IS) and subsequent NIST Personal Identity Verification (PIV) Standard initiative for Federal workers and contractors. He was also principal SHARP representative to the Smart Card Alliance (now the Secure Technology Alliance).

1999 – 2003: American Express Travel Related Services Company - Development Leader

Responsible for pioneering the first large-scale financial services smart card program, "*Blue from American Express*", product development initiative. Leader on supporting American Express legal team on all advanced payment technology matters Intellectual Property (IP) matters including corporate patent filings, technology licensing or infringement complaints, chip card specifications, security models using smart cards, and external standards. Responsibilities and achievements included:

- Administrative & analytical skills contributions to AMEX "EMV" chip-enabled credit /debit card projects using Microsoft Office expertise to develop testing and operational tools
- Enterprise-wide SME on advanced payment technologies and business solutions using emerging technology
- Team member of the U.S. Java Card smart card platform launch including contributing to the smart card production and personalization solution
- Technical manager supporting the International Smart Card Security Users Group (SCSUG)
- American Express representative to ANSI X9F Security Standards Body
- American Express representative to U.S. Technical Advisory Group for smart card standards (INCITS B10)
- American Express representative on the GlobalPlatform card committee
- American Express representative on the GlobalPlatform card management system committee
- Board Member of GlobalPlatform governance body
- Board Member of the Global Payments Forum body (telecommunications / payments organizations focus)
- American Express liaison representative to ISO/IEC JTC1 SC17 identification devices.

1996 – 1999: ORGA Card Systems Inc. - Director of New Business Development, Americas Region

Coordinated technical project, market research & analysis efforts involving smart cards, biometrics, and cryptographic security the Americas, Europe and the Far East. Secured several strategic partnerships and managed significant tactical business accounts. Assisted in smart card design and production efforts.

Project manager on the Mastercard Smart Card Physical & Logical Access smart card pilot project at Mastercard global New York headquarters using the then new MULTOS smart card platform. The project involved supporting fingerprint biometrics and symmetrical cryptography.

Actively participated in the Java Card Forum, Personal Computer/Smart Card (PC/SC) Standard implementation, MULTOS smart card operating system (O/S) application development, Microsoft Windows Smart Card O/S technical coordination for credential testing & evaluation. In-depth knowledge and experience gained using other proprietary O/S smart card implementations (e.g., ORGA Micardo, Siemens CardOS, Schlumberger MultiFlex, Gemplus MPCOS, G&D StarCOS).

1993 – 1996: Data Analysis / Schlumberger

Mr. Smith moved to Data Analysis (DANYL) / Schlumberger to support the college stored value card and was able to win multiple contracts with Visa USA in support of the then Visa Stored Value smart card effort. Mr. Smith was promoted to project manager for all matters related to financial services. While at Schlumberger he was involved in the Visa Cash initiative including producing the first ever Visa International smart card demonstration that was presented to over 500 international banks in Cancun, Mexico in May of 1994. Visa went on to use this technology at the 1996 Olympics.

1990 – 1993: VeriFone Inc.

Mr. Smith was recruited to join Silicon Valley start-up VeriFone to develop and deploy credit card terminals and other payment-oriented solutions for the banking and retail point-of-sale industry. At VeriFone Mr. Smith began as technical support resource to the Marketing department. A few months later he was asked to perform the role of division Engineering Director. Mr. Smith managed a 27-person team spread across five countries. Mr. Smith and his global team focused on promoting the use of stored-value cards in unattended retail transactions as well as the commercial adoption of new payments technologies (i.e., smart cards).

1989 – 1990: Zenith Data Systems / Groupe Bull (France)

Mr. Smith joined Zenith Data Systems briefly to assist in the development of the initial release of the Microsoft PC/SC interface for smart card reader technology (used to this day) and the Microsoft Cryptographic Application Program Interface (MS CAPI). Also created a product for Groupe Bull to allow secure logon to Personal Computers using a smart card.

1983 – 1989: Mars Electronics International

Mr. Smith served as Senior Technologist and led an Engineering group specializing in coin and bill acceptance for unattended devices at Mars Electronics International. Mr. Smith developed and deployed financial transaction peripherals including first generation smart cards within a production ecosystem inspired by the W. Edwards Deming Total Quality Management (TQM) "14 points" quality assurance movement. Mr. Smith developed the "6000" line of microcontroller-based coin mechanisms which quickly enjoyed a 60%+ market acceptance in the United States. Mr. Smith assisted in bringing a bill validator solution to the marketplace as well as consulting on a television broadcast data feed device for use in real time delivery of information from the stock market to investors. Mr. Smith filed and was awarded several patents during this tenure.

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