Gerald Smith

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 , 2019 and 2022.

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 experience related to research, hardware and software system development and deployment of card solutions, solution components and smart card reader technology. Mr. Smith has over thirty (30) years' experience in identity management in a diverse set of markets including the telecommunications and financial services sectors. Mr. Smith is a recognized Intellectual Property (IP) litigation resource serving as an expert witness to the Department of Justice (DoJ) and private entities. His experience and background includes e-commerce solutions, biometrics identification, smart card specification & technology Standards, technology integration, user interface design, credential test and evaluation, and 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 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 smart card topical matters in the U.S. and overseas.

Mr. Smith has extensive knowledge and direct coding/programming experience with various smart card operating systems that include Java Card, MULTOS, and proprietary implementations of the ISO/IEC 7816 smart card standard. Mr. Smith has an industry participation history including various roles in the Secure Technology Alliance (STA) where he was a major contributor and author for the creation for the STA Certified Smart Card Industry Professional (CSCIP) courseware. Mr. Smith was the first Professional Certification Trainer of a CSCIP course. Mr. Smith served previously as 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 smart card solutions for government and private sector industries with a particular focus on diagnostic and analysis tools for smart card issuers, smart card relying parties and associated cardholders.

The GSC imagined and developed the PC Windows-based, and Android tablet variants, Smart Card Diagnostic (SCD) application which 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 alike.

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 the Department of Justice on multiple matters and prior commercial IP work for employers such as American Express. Additionally, Smith has 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 serving as SME to the TWIC PMO for its secure biometric and smart card credentialing program deployment. The TWIC program is a large-scale government program that has issued nearly seven million biometrically enabled smart card credentials to maritime 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, 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 TSA for mobile application prototype hardware and software system development projects to realize additional internal controls for TWIC. 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. Smith is the author of a portable card analysis tool desktop application solution that validates TWIC and other smart cards known as ID-CAT.

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 card credential visual inspection 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 no longer trusted by the TWIC issuer without electrically reading the card. As Program Manager leading the IDTP TSA SME team, he has participated in criminal Rap Back solutions, Department of Homeland Security (DHS) IDENT biometrics database and other TSA STA program support activities. Mr. Smith regularly attends industry conferences as a speaking representative of the TWIC PMO, where he presents technical credentialing best practices findings and solutions, program milestones and promotion of the TWIC program and related high assurance identification solutions.

Mr. Smith is a Steering Committee member and technical contributor to the "mobile Driver's license" (mDL) initiatives in America including participating in ANSI and the Secure Technology Alliance (STA) Identity council. mDL is governed by the ISO/IEC 18013-5 standard.

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) standards 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 Sharp 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 represents 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. He is 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 IP Management, 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 version launch including contributing to the smart card production and personalization solution
- Technical manager supporting 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
- 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 in Germany, Latin America 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 project using the MULTOS platform (utilizing fingerprint biometrics and symmetrical cryptography).

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

1978 – 1996: DoD DARPA, Mars Electronics Intl., Verifone, Schlumberger, Zenith

After graduating with honors from Rose-Hulman and entering the U.S. Army, Mr. Smith was assigned as a Signal Corp Officer to the Defense Advanced Research Project Agency (DARPA) where he worked as a problem solving team member on development of computer-based terminals and peripherals using nascent technology of microprocessors including the Intel 8080a, Motorola 6800, Rockwell 6502, and the RCA COSMAC first all-CMOS (complementary metal on silicon) processor. Mr. Smith left in 1983 to head 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 was awarded several patents during

this tenure. In 1989, Mr. Smith was asked to join Silicon Valley start-up VeriFone which developed and deployed credit card terminals for the banking and retail point-of-sale industry. At VeriFone Mr. Smith was head of a 27-person team spread over five countries promoting the use of stored-value cards. In 1993, Mr. Smith moved to Schlumberger to support the Visa Stored Value smart card effort where he served as project manager for all matters related to financial services. While at Schlumberger he was involved in the Visa Cash initiative including producing the first smart card demonstration that was presented to over 500 international banks in Cancun, Mexico in May of 1994. Prior to joining ORGA as a Regional director for financial services supporting MasterCard, Visa, and American Express, Mr. Smith worked for Zenith Data Systems in the development of the Microsoft PC/SC interface for smart card reader technology (used to this day).