



Annual Review 2015



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#1

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TOP 10
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ID CARDS 

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LICENSE 

PASSPORT 



CONNECTED DEVICE MAKERS

SMART
PHONES (eSE) 

IoT/ M2M
(eUICC) 

SECURED
OBJECTS 

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The Smart Card Alliance Annual Review is produced by the Smart Card Alliance, a not-for-profit, multi-industry association working to stimulate the understanding, adoption, use and widespread application of smart card technology.

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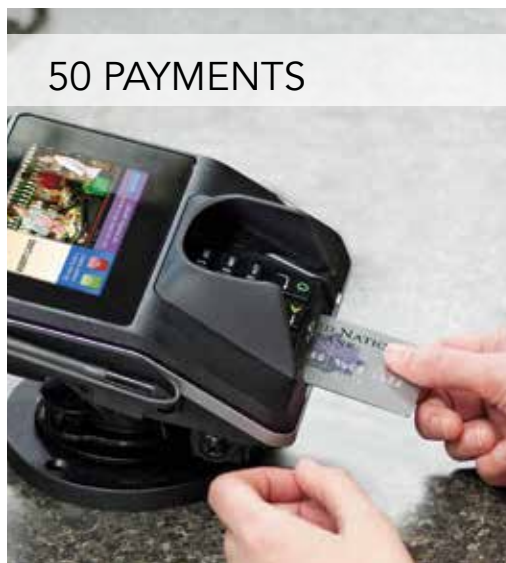
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A MESSAGE FROM RANDY VANDERHOOF

Organizations Fueled by Common Mission



As I reviewed the long list of activities and major accomplishments of the Smart Card Alliance and its affiliated organizations in 2015, a familiar image kept entering my mind. Three interlocking rings reflect on the nature of how three different things can operate independently, have a unique culture and personality, and yet be interconnected and mutually strengthened at the same time by a common mission and overlapping interests.

I often describe the Smart Card Alliance in these terms, with the Alliance representing one community of industry stakeholders with a common mission, joined together with two other communities of stakeholders – the EMV Migration Forum and the Smart Card Alliance Latin America (SCALA) chapter. These three vibrant groups have different personalities, missions, and cultures, yet they are connected to each other, and strengthened by a common commitment to accelerating the usage and adoption of secure smart card technologies across the Americas, from Canada to Argentina. Collectively, they include 373 organizations and thousands of individuals who do amazing work as a community

of believers in the potential of secure smart card chip technology to make transactions more secure for payments, transit, mobile, government, enterprise, and healthcare – and in the newest market, the Internet of Things. That sharing and exchange of knowledge and experience strengthen the collective whole.

The three rings also represent one of the foundational security principles that smart card technology brings to every market where it exists – the ability to bind identities and digital identifiers together and to enable secure authentication of that digital identifier by a relying party like a bank or an employer – leading to trusted access to services or facilities. Many of the white papers, webinars, FAQs, and other educational resources these organizations generated and distributed to the public in 2015 incorporated these three security concepts – identification, authentication, and access. The deliverables from our 2015 training programs, industry workshops, and discussion forums applied these three principles to each market audience in which they were presented.

Our training and certification programs, the CSCIP and the CSEIP, also apply these security principles when educating a new generation of security professionals who serve the multiple markets where smart card technology is being adopted. Many of these training programs and a host of new in-person seminars and webcasts will be hosted at the new Smart Card Alliance Training Center, which is opening shortly in the Washington, DC, suburb known as Crystal City. The modern, 2,800 sq. ft. office, just minutes from the airport and downtown Washington, will serve as a hub for our education and training programs and a resource for our members.

As I contemplate the bright future of the smart card industry and our organizations, again the three-rings image applies. As industry organizations, we long ago moved beyond thinking in the limited terms of a smart card form factor when going about our mission to promote chip technology; yet smart card shipments globally keep growing and will surpass 8 billion units in 2015. The U.S. payments industry's move to EMV alone will add around 500 million cards to those totals by the end of this year and another 500 million over the next few years. The mobile industry has been embracing SIM technology since 1991 and the UICC became synonymous with NFC and secure elements in 2006. Lately, the embedded UICC (eUICC) is gaining popularity in a whole new generation of smart phones that have mobile payments functionality. The third generation of smart cards can be found in the burgeoning machine-to-machine (M2M) market, commonly referred to as the Internet of Things (IoT). This market for connected devices is already larger than 10 billion units and expected to reach 28 billion units by 2020. The smart "security" industry has a great deal of work to do to raise the awareness about the value of smart chip technology for security of IoT connected cars, machines, and medical devices. The Smart Card Alliance will begin to embrace this challenge in earnest in 2016.

I want to thank our members and their dedicated employees for their continued support of the Smart Card Alliance, the EMV Migration Forum, and SCALA. Our continued strengths as industry groups to shape the market and grow the pie for all participants are rooted in the strong bonds represented by the interlocking rings that I spoke of and that have served us so well over time. Congratulations on your accomplishments in 2015 and we look forward to more success in 2016.

Randy Vanderhoof
Executive Director
Smart Card Alliance

A MESSAGE FROM WILLY DOMMEN, SMART CARD ALLIANCE CHAIR, 2011-2015

A Reflection on Accomplishments



My two terms as Chairman of the Board of Directors have ended, and while I was absorbing the fantastic weather in Arizona during the October Member Meeting and NFC Solutions Summit, I reflected on the last four years and the organization accomplishments. I also reflected on how the world around us has changed.

The Alliance organization, much like the smart card industry it serves, is in the midst of a transformation from an entrepreneurial style of business, growing rapidly in many directions, to a stable, more mature business with controlled growth. For example, as the government and payments markets mature, it creates opportunities in other emerging markets for smart card technology and attracts new industry participants to our events and activities. Over the last few successful years, we anticipated these market changes and started the process of laying the groundwork to adjust to them.

Another important change that occurred is the transformation of the Board of Directors from an oversight board to a working board. First, I want to recognize and thank the Board members I had the opportunity to work with. Without your support and intellectual-challenging discussions, the quality of the work we accomplished would not have been achieved. Many of the activities conducted over the last few years required the board to actively participate in many initiatives, particularly during the development of the three to five year business plan. The Smart Card Alliance Board of Directors includes some of the best thinkers in the industry, so it only makes sense to leverage this knowledge to make the organization better.

Looking forward into the future, the Alliance is poised to support many exciting industry trends. The healthcare identity market, while slow moving now, represents a great opportunity to have an impact on strengthening patient and provider authentication and healthcare data security. Then there is the "Internet of Things." We are standing in front of a massive opportunity that has yet to be defined and that has tremendous opportunity for security and authentication technologies. Also, I am excited to see how our new training center being established in Virginia, just outside of Washington, DC, will develop. Under the leadership of Randy Vanderhoof and Lars Suneborn and their dedication to the industry and education, I foresee a thriving community emerging from the related activities.

As I pass the torch to Brian Russell of Giesecke & Devrient, I am proud of what has been accomplished. It could not have been achieved without the support and work by Randy, the board and the contributions from our membership. The Smart Card Alliance has a solid business foundation, a stable and supportive membership, and an executive director that will allow the organization to serve our membership well into the future, even through challenging market conditions. During my tenure, such challenges included a shift from a significant focus on contactless technology to implementation of EMV in response to a sharp increase in data breaches and a slowdown in new government security projects involving ICAM, mobile credentialing, and PIV for transit due to budgeting cutbacks. These circumstances required the Alliance to be flexible and adapt while still providing the membership with the value expected. As we move into the future, the one thing we can predict is that more of these unforeseen market events will continue to require the Alliance to be adaptable.

I would now like to take a few words and welcome Brian Russell, a long-standing Leadership Council member, to his new role as the Chairman of the Board of Directors for the next two years. Brian served as the Treasurer of the organization for the last two years. If Brian's contribution and the improvements he initiated around the SCA's financial management practices are an indicator of his future contribution as Chairman, this organization will be very well served.

I know I have not been the most politically flamboyant chairman of this wonderful organization. However, I do take pride in what has been accomplished by playing the role of a journeyman business leader, and trying to get a few things done to make sure the Smart Card Alliance addresses the needs of our super supportive membership into the future.

Willy Dommen
Senior Manager
Accenture

ALLIANCE MANAGEMENT



Left to right: Kristin Krebs, Jaclyn Sauvé, Cathy Medich, Debra Marshall, Randy Vanderhoof, Lars Suneborn, and Bill Rutledge.
(Not pictured: Edgar Betts, Nicole Lauzon, Mike Strock and Shelby Votapek)

RANDY VANDERHOOF

Executive Director

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Randy Vanderhoof is the Executive Director of the Smart Card Alliance. The Smart Card Alliance is a not-for-profit, multi-industry association of over 200 member firms working to accelerate the widespread acceptance of smart card technology in North America and Latin America. In addition to his leadership role with the Smart Card Alliance, in August 2012 he became the Director of the EMV Migration Forum, an independent, cross-industry organization established to support the alignment of global payment networks, regional payment networks, issuers, processors, merchants, and consumers to successfully move from magnetic stripe technology to secure EMV contact and contactless technology in the United States.

Prior to joining the Smart Card Alliance, he was with IBM Global Smart Card Solutions. From 2000 to 2001, he was Vice President Business Development with First Access, Inc. a developer of contactless smart card technology for network access security and authentication. From 1995 to 2000, he worked at Schlumberger (now Gemalto) as Market Segment Manager,

Campus Solutions supporting the development and marketing of smart card-based identification and payment systems.

Randy is a graduate of Saint Joseph's University in Philadelphia, PA with a BS in Management Marketing. He received his MBA from Rider University in Lawrenceville, NJ.

EDGAR BETTS

Associate Director, SCALA

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Edgar Betts came to the Alliance in March 2005 to help develop and complete the Market Development Cooperator Program (MDCP) grant for Latin America issued by the International Trade Administration to the Alliance. After working with key industry organizations to create the Smart Card Alliance Latin America (SCALA) chapter, he was appointed Associate Director. Prior to joining the Smart Card Alliance, Edgar was the Executive Director and Co-Founder of the Smart Card Division for Integra Group Corporation, responsible for the promotion, distribution, and implementation of smart card and RFID solutions for the Central American and Caribbean markets. Prior to that he worked under the

Director of Electronic Business Technologies at the U.S. General Service Administration (GSA), promoting electronic business technologies and government policies for the United States Government. In 2007, the Junior Chamber International (JCI) of Panama recognized Edgar with "The Outstanding Young Persons of the World" (TOYP) award under the category of Science & Technology Development.

In 2010, "Capital Financiero" also recognized him in their list of the 40 most influential people under 40.

KRISTIN KREBS

Coordinator, Conference Services

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Kristin Krebs is responsible for supporting the conference logistics for the Smart Card Alliance and EMV Migration Forum. Before joining the Smart Card Alliance in 2012, Kristin worked in a range of positions, including Advertising Coordinator at Caldor, Executive Assistant at ASML, Executive Assistant & Division Event Planner at Scholastic Inc. Kristin graduated from Katherine Gibbs College.

NICOLE LAUZON

Membership

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Nicole Lauzon is responsible for membership management and database support for both the Smart Card Alliance and EMV Migration Forum. A 2005 graduate of Douglass College at Rutgers University, she joined the Alliance in 2009.

DEBRA MARSHALL

Manager, Communications

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Debbie Marshall's responsibilities include identifying goals to align communications and messaging into polished publications for the Smart Card Alliance. She develops, edits and maintains all Alliance printed materials, including monthly and quarterly newsletters, the Annual Review, website content, membership kits and other written communications and programs. She also oversees the COE program, and is responsible for communications for the EMV Migration Forum, coordinating monthly and quarterly newsletters and writing announcements and updates.

Debbie began her career as a newspaper reporter, and has worked for Fortune 50 companies, advertising agencies and non-profit organizations. Prior to joining the Smart Card Alliance, she served as consultant for Bank of New York Mellon, Siemens, and the Public Relations Society (PRSA) of America. Debbie graduated cum laude with a B.A. in Communications from Seton Hall University.

CATHY MEDICH

Director, Strategic Programs

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Cathy Medich is Associate Director for the EMV Migration Forum and Director of Strategic Programs for the Smart Card Alliance. In these roles, she manages marketing and industry initiatives, directs industry council and working committee activities,

and manages strategic projects. Working with member teams, Cathy leads the development of educational white papers, webinars and workshops covering priority topics for the industry.

Cathy has over 20 years of experience in marketing and strategic planning for technology businesses, including consulting engagements or positions with Hewlett-Packard, VeriSign, Verifone and CommerceNet. Cathy has B.S. and M.S. degrees in Electrical Engineering and Computer Science from M.I.T. and an M.B.A. from the Wharton Graduate School.

BILL RUTLEDGE

Consultant, Events

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Bill has over 23 years of experience in all aspects of international business event media management. He has been involved in the launch and development of over 110 different conferences, trade shows, custom events, and virtual events. In addition to events he has developed for the Smart Card Alliance, Bill has presented events for TSCP, Elsevier, atsec, The Cryptographic Module Users Forum, Wiley-Blackwell, Advantage Business Media, Reed Business Information, and SourceMedia.

Bill was previously group director for Access Intelligence, (fka Chemical Week), Penton Media, and United Business Media (fka Miller Freeman). He is a graduate of New York University's certificate program in Business Media, and has a B.A. in comparative literature from University of California-Santa Cruz.

JACLYN SAUVÉ

Manager, Conference Services

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Jaclyn Sauvé is currently the Manager of Conference Services for the Smart Card Alliance and EMV Migration Forum, leading the logistic support team responsible for all conference operations. In addition, Jaci

supports each conference program committee as a speaker liaison and the Sales and Marketing staff by managing all Exhibitor and Sponsor communications.

Before joining the Smart Card Alliance in 2011, Jaci worked for 14 years in a diverse range of positions, including Director of Field Sales Administration & Division Event Planner at Scholastic Inc., Database Administrator / Event Coordinator / Marketing Assistant at Eschenbach Optik and Multimedia Coordinator at Danbury Hospital.

Jaci holds a degree in Communications / Media with a concentration in video production from Western Connecticut State University.

MIKE STROCK

Project Coordinator, Industry Councils

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Mike Strock serves as the Project Coordinator for Industry Councils at the Smart Card Alliance, which he joined in late 2014 after supporting projects and Working Committee efforts for the EMV Migration Forum since June 2013. Prior to his experience with the Alliance and Forum, Mike worked closely with personnel within both EMVCo and GlobalPlatform on day-to-day operational matters, including planning EMVCo vendor meetings, implementing a new travel system, scheduling meetings around the world, and managing the training seminar process for GlobalPlatform.

Mike also worked as a Client Services Manager for EM-Assist, a company that develops eLearning and interactive software applications. Before that, he completed a five-year management fellowship as a Program Manager and Executive Officer with the U.S. Army's Material Command. Mike holds an MSBA from Texas A&M and a BA in both Public Relations and Spanish from Weber State University.

LARS R. SUNEORN,
CSCIP/G, CSEIP
Director, Training Programs
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Before joining the Smart Card Alliance in 2014, Lars enjoyed a 30+ year career in the security industry, where he is recognized as a Physical Access Control System (PACS) subject matter leader. A frequent speaker, Lars is often specifically requested by name for specialized training requirements. He has developed and conducted customized, agency specific week-long training courses and courseware as well as Train-the-Trainer activities for a wide variety of U.S., Canadian and British security agencies at facilities worldwide. He also actively promoted smart card, biometric and PKI cryptographic technologies as vital components in overall system designs for high-risk, high-security facilities nationally and internationally, and guided U.S. agencies in their efforts to achieve HSPD-12/ FICAM compliance.

A former chairman of the Smart Card Alliance Access Control Council, Lars previously served in various capacities with HIRSCH Electronics and Oberthur Technologies, where his numerous achievements included developing, with the Department of Treasury and IT/Security, the concept and implementation plan for nation-wide ePACS network for 700+ locations.

SHELBEY VOTAPEK
Consultant, Communications
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Shelbey joined the Smart Card Alliance in 2013, where she manages member communications and assists on various projects for both the Smart Card Alliance and the EMV Migration Forum. Prior to becoming a consultant with the Alliance, Shelbey was a Product Development manager for Verizon Wireless, responsible for an annual revenue of over \$500 million. She has also spent time as an Interactive Marketing manager for Realogy Corporation and worked for Comcast and Comcast Spotlight.

Shelbey has a Master's of Business Administration from Centenary College and a bachelor's degree in International Business and Marketing from Fairfield University.



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Scott Rau, Chase Card Services
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Thomas Lockwood, NextGenID
Michael Nash, Xerox
Thomas Parker, Infineon Technologies
Elinor Smith, Discover Financial Services
Garfield Smith, Oberthur Technologies
Kelly Urban, First Data Corporation

Membership Benefits

Your membership dollars support the council initiatives, networking meetings and industry events, web site development, marketing programs, newsletter, Educational Institute workshops, industry advocacy and media outreach efforts that all contribute to the growth of the smart card industry in North and Latin America.

Our strategy for the coming year is to continue to engage the many diverse aspects of our industry and to strive to bring together the providers of the technology and the users of the technology in a friendly, open community.



"Great job - keep up the good work"
– **Daryl Hendricks, GSA**

"Communication is very well circulated among everyone attending conferences"
– **Eric Barron, CPI Card Group**

"For us, the events, particularly the Government Conference, are the highest value both for information and networking"
– **John Fessler, Exponent**



As a not-for-profit, membership organization, the Smart Card Alliance mission is to accelerate the widespread adoption, usage, and application of smart card technology in North and Latin America by bringing together users and technology providers in an open forum to address opportunities and challenges for the industry. This balance makes the Smart Card Alliance a unique place where users, issuers and suppliers meet to exchange ideas, discuss common issues and work together to develop and expand the use of all types of integrated circuit "chip" cards and alternative smart card technology form factors in the Americas. Members come from all industry sectors, including financial, retail, transit, corporate, government, healthcare and mobile, along with the technology and solution providers that service these sectors.



- ✓ Alliance meetings and conferences
- ✓ Company visibility
- ✓ Information, research and education
- ✓ Support for standards and industry interoperability
- ✓ Outreach to government and commercial organizations
- ✓ Innovative ways of approaching common business goals
- ✓ Professional development

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- ACI Worldwide
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- Entrust Datacard – SCALA
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- Giesecke y Devrient de Mexico – SCALA
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- INSIDE Secure
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- Smartrac Technology Group – SCALA
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- United Services Automobile Association
- US Department of Transportation/ Volpe Center
- US Government Printing Office
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- Vantiv
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- VeriFone Inc – SCALA
- Visa – SCALA
- Visa
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- Watchdata Technologies – SCALA
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- Xerox
- XTec, Incorporated
- Zebra Technologies Corporation
- Zeva

As of September 30, 2015

Leadership Council

accenture

First Data®

KONA

VALID



FIS

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vantiv.

Booz | Allen | Hamilton

gemalto
security to be free

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ZEBRA

Deloitte.

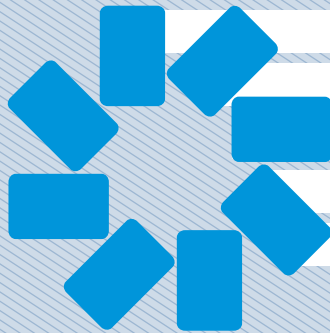
DISCOVER

JCB

TSYS

zeva

2015 MEMBER SURVEY



REPORT ON MEMBER SATISFACTION AND VALUE OF ALLIANCE ACTIVITIES

The Smart Card Alliance annual member survey had an excellent response this year. We had 182 members from 82 member organizations (49.7% of all member organizations) respond to our June survey with responses indicating strong, continued satisfaction with Alliance activities and programs.

MEMBER SATISFACTION

As with previous years, we ask members to give us a numeric score between 0-99 to gauge overall satisfaction, with 90-99 indicating high satisfaction; 80-89 indicating satisfaction; 70-79 indicating low satisfaction, with improvement needed; and 0-69 indicating dissatisfaction.

This year our average satisfaction rating was 87.2, an increase from 2014's 87.0 rating and the highest overall rating since 2007. Satisfaction is good across all member categories, with 90.3% of members rating the Alliance above 80. As we've seen in past years, active members have a higher satisfaction rating than non-active members (88.9 for active members vs. 85.4 for inactive members) and our Council members also give the Alliance higher ratings.

Figure 1 shows the satisfaction rating by member category.



In addition to the composite satisfaction rating, the survey asks members to rate satisfaction with a variety of Alliance activities and programs. A scale of one to five was used, with five indicating the highest satisfaction. Our overall rating for all activities was 4.06; many activities had ratings over 4 including:

- Payments Summit
- Council white papers and reports
- Government Conference
- Member Meeting
- Smart Card Alliance public and members-only web sites
- NFC Solutions Summit
- Certified Smart Card Industry Professional (CSCIP) program
- EMV Connection web site
- Email announcements about Alliance events and Council projects
- Quarterly Smart Card Talk newsletter

- Monthly Alliance Member News Bulletin
- Daily Smart Card Industry News Summary
- Industry Council participation

VALUE OF ALLIANCE ACTIVITIES

Communications, events/meetings, and Alliance resources/deliverables are highly valued by members. Activities rated as highest value in the 2015 survey were:

- Communications: Smart Card Alliance members-only website; email announcements about Alliance events; Smart Card Alliance public web site; EMV Connection website
- Events/meetings: complimentary and discounted registration to Alliance events; networking opportunities;



speaking opportunities at Alliance events

- Resources/deliverables: white papers/resources on the members-only website; CSCIP program; past conference proceedings on the members-only website

BENEFITS OF ALLIANCE MEMBERSHIP

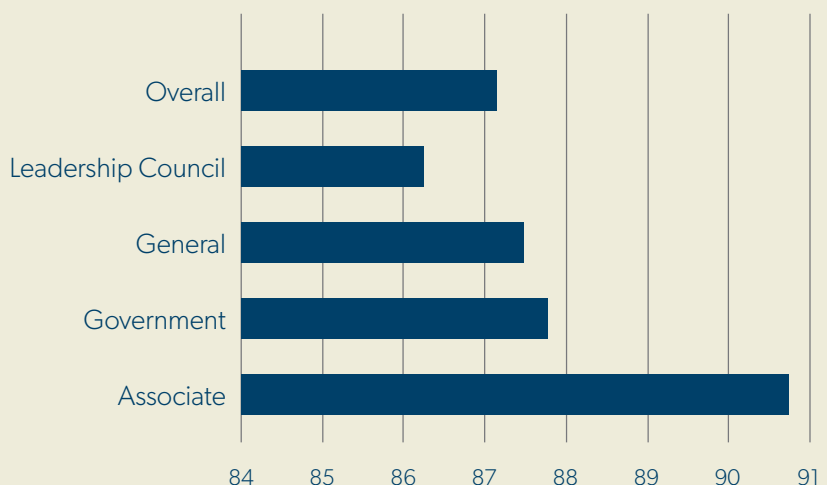
When asked to tell us the top benefits of Alliance membership, members gave us a wide variety of responses. Top benefits identified in the 2015 survey were:

- Industry updates, trends and information
- Networking
- Participation in industry discussions
- Exposure and visibility in the industry
- Education and training

Benefits in the words of a few members included:

“Smart Card Alliance Government Conferences help me keep the pulse of Federal Government and vendors with HSPD-12 initiatives, directions and status.”

FIGURE 1. SATISFACTION RATING BY MEMBERSHIP LEVEL



“It’s worth joining the Smart Card Alliance. I have grown in the knowledge of EMV and latest technology related to payments industry by being part of LEAP.”

“The diverse membership provides significant and unique opportunities for cross-industry dialogue, and the organization is a critical venue for us to engage with other organizations on key issues.”

“Being able to attend meetings is very educational as you get great speakers and panel participants. We learn a lot about the wider industry by attending. So getting a discount or free ticket to these events because of our membership is a great perk.”

IMPORTANT INDUSTRY ISSUES

Mobile, EMV, tokenization and cybersecurity are on the top of the list for the most important industry issues and topics that the Alliance should be working on. The Alliance industry councils focus on activities that members feel are the most important for coordinated activity and collaboration among industry stakeholders. Members are encouraged to participate in the councils to tackle industry challenges and help to move the industry forward in critical markets.

We thank everyone who responded to the 2015 member survey! The survey provides extremely valuable input in developing plans for the coming year.

MEMBER PROFILES

Each quarter, we profile a Leadership Council member company in our Smart Card Talk quarterly newsletter. This popular feature focused on both the company's membership point of contact and his or her company, offering an opportunity for members to learn more about the business profiles of their professional colleagues. Access the complete interviews by visiting the [Smart Card Alliance website](#).



Q1 2015 MEMBER PROFILE (FEBRUARY) TSYS



Sarah Hartman

TSYS, a global payments processor, believes payments should revolve around people, not the other way around. The company calls this belief "People-Centered Payments." By putting people at the center of every decision made, TSYS supports financial institutions, businesses and governments in more than 80 countries. Through NetSpend, a TSYS company, consumers are empowered with the

convenience, security, and freedom to be self-banked. TSYS offers issuer services and merchant payment acceptance for credit, debit, prepaid, healthcare and business solutions.

Smart Card Talk spoke about the company's profile and offerings with Sarah Hartman, who serves as Senior Director of Consumer Payment Solutions. With more than 25 years of payments industry experience, Sarah's responsibilities include product and strategy activities associated with the consumer credit and debit card issuing business.

"This is a very exciting time to be involved in the payments industry," said Hartman. "Smart card and mobile payment usage is growing rapidly. We believe it's critical we understand the needs of our clients and also stay current on what's happening in the industry. TSYS has been issuing chip cards for well over 10 years, initially supporting the European region, moving on to Canada, and now focusing our efforts in the U.S."

"Beyond initial chip card launches, there are many different ideas and applications for using smart card technology to further business activities. Prioritizing the next best application/opportunity, ensuring the business case exists to gain the traction needed for widespread use, and confirming the cardholder adoption are some of the items we'll be addressing."



Q2 2015 MEMBER PROFILE (MAY) Ingenico Group



Allen Friedman

Ingenico Group is the global leader in seamless payment, providing smart, trusted and secure solutions to empower commerce across all channels, in-store, online and mobile. With the world's largest payment acceptance network, the company delivers secure payment solutions with a local, national and international scope. They work with more than 1,000 acquirers and banks, with solutions that process

300 different payments methods.

Smart Card Talk spoke with Allen Friedman, Director of Payment Solutions at Ingenico Group, North America, where he is responsible for Ingenico Group's EMV Payment Solutions and the EMV implementation strategy in the United States.

"We are in the payments business, so in that context smart cards are primarily EMV chip cards – the new credit and debit cards replacing older magnetic stripe cards, which are susceptible to counterfeit and fraud. The U.S. is the last developed country in the world still using magnetic stripe cards. As a result, much of the world's card fraud has migrated here. To help eliminate that, the U.S. is finally moving to the EMV standard, which relies on a chip rather than a magnetic stripe for authentication, which has been proven to be highly secure in comparison. Merchants are gearing up to accept EMV card payments, and Ingenico has been through this transition many times in many countries, so we know the process well."

"Ingenico is in a great position to help merchants pull all of this together, providing a seamless payment experience for customers across online, in-store and mobile environments."



Q3 2015 MEMBER PROFILE (AUGUST) Visa



Simon Hurry

Visa Inc. is a global payments technology company that connects consumers, businesses, financial institutions and governments in more than 200 countries and territories to fast, secure and reliable electronic payments. Visa is not a bank and does not issue cards, extend credit or set rates and fees for consumers. Visa's innovations, however, enable its financial institution customers to offer consumers

to pay now with debit, pay ahead of time with prepaid or pay later with credit products.

Smart Card Talk spoke with Simon Hurry, a member of the Board of Directors of the Smart Card Alliance and a senior director at Visa Inc., responsible for global contactless and contact chip card programs and leading Visa's chip rollout in the U.S. He has more than 20 years of experience in the payments industry with a specialized focus on smart card and contactless payments.

"Visa is helping to lead the industry in developing a comprehensive approach to making payments safer through smarter technologies to make payment data unusable to criminals," said Hurry. "Three technologies are being deployed to reduce or eliminate the ability to misuse this sensitive data. These include an EMV chip (which creates a dynamic one-time code for each transaction); tokenization (which replaces the account number with a unique digital token); and point-to-point encryption (the process of encrypting data in a secure terminal and transmitting it through a network to a secure decryption point)."

"Together, these technologies will significantly reduce payment fraud and help protect merchants from cyber security threats."



Q4 2015 MEMBER PROFILE (NOVEMBER) Capgemini Financial Services



Debbie Baxley

Capgemini Financial Services is one of the world's foremost providers of consulting, technology, outsourcing services and local professional services. Present in over 40 countries, the Capgemini Group helps its clients transform to improve their performance and competitive positioning. With a network of 25,000 professionals serving over 900 clients worldwide, Capgemini collaborates with leading

banks, insurers and capital market companies to deliver business and IT solutions and thought leadership.

Smart Card Talk spoke about the company's profile and offerings with Deborah Baxley, a Principal with Capgemini. An international retail payments consultant, recognized industry expert, creator of growth strategies for new and existing markets, with more than 20 years experience consulting to banks, Baxley has in-depth experience in mobile payments and credit cards. She has performed strategy work in 14 countries for top banks and payment companies, advising on product direction and competitive positioning. She is a board member of the Smart Card Alliance and has her CSCIP certification.

"One of our strongest domain areas is our cards and retail payments practice, comprising more than 3,000 people," said Baxley. "We have experience with all leading technology platforms to support the complete cards value chain, including those provided by First Data, TSYS, Experian, FICO, Pega, ACI, and others. Our research provides key insights in the evolution of financial service markets and products for all stakeholders."

"We have watched and waited for so many years for the U.S. to migrate to EMV. Some thought it would never happen! Seeing that hurdle overcome is very gratifying."

MEMBER RECOGNITION PROGRAM



Congratulations to the Class of 2015

We are delighted to announce the 22 member companies who comprise the third year class of Center of Excellence (COE) organizations. These Center of Excellence organizations will be recognized in a number of ways throughout 2016.

- Advanced Card Systems (NEW)
- American Express
- Consult Hyperion (NEW)
- CPI Card Group
- Cubic Transportation Systems
- Discover Financial Services
- First Data
- Gemalto
- Giesecke & Devrient
- Hewlett-Packard Enterprise Services
- HID Global
- Identification Technology Partners (NEW)
- Ingenico, North America
- INSIDE Secure (NEW)
- MasterCard Worldwide
- NXP Semiconductors
- Oberthur Technologies
- TSYS
- Underwriters Laboratories (UL)
- Visa
- Xerox
- XTEC Incorporated

Alliance Recognizes Outstanding Member Companies

The Smart Card Alliance created a new member program in 2013 called the Smart Card Alliance Center of Excellence to recognize an elite mix of member companies who reach the highest level of active participation in the Alliance by having made outstanding contributions in the form of providing valuable time, talent and resources across a wide mix of Alliance activities.

Member involvement is not measured by how large an organization is, but by the actions of the organization and the commitment of its employees when it comes to fulfilling the mission of the Smart Card Alliance.

In 2015, 22 member companies received the COE designation. We are proud that 15 of these companies also received the designation in 2014.

Inclusion in this exclusive level is directly related to the following criteria members demonstrated in 2014-2015:

- Industry Council recognition for Honor Roll membership or Top Contributor to one or more of our Industry Councils
- Council officer position elected by peers
- LEAP/CSCIP training and certification
- Corporate CSCIP training and certification participation
- Alliance conferences and events sponsorship of \$5,000 or greater in the last year
- Supporting membership in multiple chapters (SCALA) or affiliated organizations (EMV Migration Forum)

Smart Card Alliance Center of Excellence (COE) Recipients Profiled in our Member Bulletin

JANUARY 2015

Verifone

(Verifone, a 2013 recipient, was profiled in 2015)

A 2013 COE recipient, Verifone is leading the commerce evolution, providing the most secure terminal, payment as a service, and commerce enablement solutions around the world. For more than 30 years, they have been at the forefront of secure payments innovation—first moving society from paper-based payments to

electronic transactions, and now into a new and exciting world of commerce. Verifone is at the center of this new world, simplifying complexity of emerging payment methods and technologies for the payments ecosystem. Their innovative hardware and software provide merchants and retailers the tools they need to need to securely accept all types of payments.

MARCH 2015 **First Data**

(First Data, a 2013 recipient, was profiled in 2015)

A 2013 COE recipient, First Data is a global technology leader in the financial services industry. With 24,000 employee-owners and operations in 35 countries, the company provides secure and innovative payment technology and services to millions of merchants and financial institutions around the world, from small businesses to the world's largest corporations. Today, businesses in nearly 70 countries trust First Data to secure and process their financial transactions. The company offers industry compliant point-of-sale (POS) devices supporting contactless and contact chip cards. First Data also operates an industry certified service provider, Trusted Service Manager (TSM), to support secure element-based mobile wallets.

APRIL 2015 **Discover Financial Services**

Discover Financial Services is a direct banking and payment services company with one of the most recognized brands in U.S. financial services. Since its inception in 1986, the company has become one of the largest card issuers in the United States. The company issues the Discover card and offers certificates of deposit and money market accounts through its direct banking business. It operates the Discover Network, with millions of merchant and cash access locations; PULSE, one of the nation's leading ATM/debit networks; and Diners Club International, a global payments network accepted in more than 185 countries and territories.

JUNE 2015 **UL**

UL is one of the most recognized and trusted resources for advancing safety. Its Transaction Security Division guides companies in mobile, payments and transit through the complexities of electronic transactions. UL is the global leader in safeguarding security, compliance and global interoperability, and offers advice, test and certification services, security evaluations and test tools during the full life cycle of the product development process or implementation of new technologies. UL collaborates with industry players to define robust standards and policies and has accreditations from

industry bodies including Visa, MasterCard, Discover, JCB, American Express, EMVCo, UnionPay International, PCI, GCF, GlobalPlatform, and NFC Forum.

JULY 2015 **Giesecke & Devrient (G&D)**

G&D is a privately held, international corporation headquartered in Munich, Germany. The company was founded in 1852, and has 58 subsidiaries in 31 countries. G&D employs over 10,000 people worldwide and is a leading international technology provider with a long tradition. G&D develops, produces, and markets products and solutions for payment, secure communication, and identity management. G&D maintains a leading competitive and technological position in these markets. The group's clients include central banks and commercial banks, wireless communications providers, businesses, governments, and public bodies. G&D is also a leading company offering banknote and security printing, security paper, and banknote processing services.

SEPTEMBER 2015 **CPI Card Group**

CPI Card Group is a global leader in financial card production and related services under the Visa, MasterCard, American Express and Discover payment brands. A leading provider of comprehensive financial payment card solutions in North America, the company offers a single source for cards and other form factors, from financial and prepaid debit to EMV chip and mobile, instant issuance, and personalization and fulfillment services. With over 20 years of experience in the payments market and as a trusted partner to financial institutions, CPI Card Group's solid reputation of product consistency, quality and outstanding customer service supports their position as a market leader.

OCTOBER 2015 **NXP Semiconductors N.V.**

NXP Semiconductors N.V. (NASDAQ: NXPI) creates solutions that enable secure connections for a smarter world. Building on its expertise in high-performance mixed signal electronics, NXP is driving innovation in the areas of connected car, security, portable & wearable, and the Internet of Things. NXP has operations in more than 25 countries. Their businesses are High Performance Mixed Signal, Automotive, Secure Identification Solutions, Secure Connected Devices, Secure Interfaces & Power and Standard Products. Combined with application insights, sub-system expertise and standard products, the company can provide multiple solutions to engineering problems – working to enable secure connections for a smarter world.

TRAINING AND CERTIFICATION PROGRAMS



Training and Certification Programs

The Smart Card Alliance is strongly committed to offering industry education programs, training opportunities and resources so that individuals and organizations can get in-depth education on smart card technology, applications and implementation best practices. Our robust programs include:

- The [Leadership, Education, and Advancement Program \(LEAP\)](#) an online, members-only organization for smart card professionals
- [Certified Smart Card Industry Professional \(CSCIP\)](#), an internationally recognized credential for smart card industry professionals
- [Certified System Engineer ICAM PACS \(CSEIP\) training and certification program](#), a designation that provides system engineers with the necessary training to efficiently and effectively set up and test enterprise physical access control systems (E-PACS) to align with government-wide specifications
- The Smart Card Alliance [Educational Institute](#), which offers online and classroom-based courses covering smart card technology and applications



LEAP

LEAP is an online, members-only organization for smart card professionals. Its purpose is two-fold:

- To advance education and professional development
- To manage and confer, based on a standardized body-of-knowledge exam, the CSCIP designation

LEAP provides members with resources and materials including white papers, FAQs, position papers and archives of webinars, workshops and conference proceedings in the access control, payments, identity, healthcare, mobile and transportation markets, all of which are updated regularly. LEAP membership also offers opportunities for individuals to further their careers and showcase their professionalism within the industry. LEAP is especially valuable for new entrants to the market or professionals working for small organizations without access to full Smart Card Alliance membership benefits.



Certified Smart Card Industry Professional

The Smart Card Alliance offers three CSCIP credentials: CSCIP, CSCIP/Government and CSCIP/Payments. CSCIP is an internationally recognized credential for smart card industry professionals. The CSCIP program prepares professionals to gain advanced levels of smart card technology and applications knowledge, and then move on to complete training and pass a multi-part exam.

Regardless of the specific credential, CSCIP certifications require demonstrated proficiency in a broad body of industry knowledge, including:

- Smart card technology fundamentals
- Security
- Application and data management
- Identity and access control usage models
- Mobile and Near Field Communication (NFC) usage models
- Payments usage models

The Alliance's CSCIP Smart Card Technology and Applications Training Course Modules serve as the primary review materials for the CSCIP certification exam, and include more than 300 pages of text, charts, and graphics. A full day CSCIP training and exam preparation class led by seasoned smart card industry experts further solidifies the technical and broad smart card business applications training experience. The Alliance maintains and updates its training materials to reflect industry changes.

The CSCIP certification has become the benchmark for executives in increasingly competitive markets where proven expertise is critical. Through corporate and individual training programs, and workshops at industry conferences, the Alliance offers professionals training and tools to earn the certification and differentiate themselves from their peers. At the same time, corporate participation in these programs demonstrates employers' commitment to developing and maintaining highly skilled workers.

As of June 30, 2015, the Smart Card Alliance had awarded certifications to 220 executives globally since the program's inception in 2009.



CSEIP

The [Certified System Engineer ICAM PACS \(CSEIP\) training and certification program](#) has been extremely popular. The first three-day training and exam was given in July 2014, and since then, 109 professionals have the designation. This GSA-approved training program provides the training and certification required for E-PACS engineers employed by commercial organizations that are looking to bid on GSA procurement agreements for access control systems.

To ensure that procurements of approved E-PACS for GSA managed facilities are installed properly, GSA requires that all billable work performed on such systems be done using certified system engineers

The classroom training curriculum includes learning objectives that provide system engineers with the knowledge to properly implement E-PACS, and hands-on training demonstrates the engineer's abilities to set up, test and configure access control features within the security system.

Smart Card Alliance Educational Institute

The Smart Card Alliance Educational Institute develops and conducts educational courses to provide objective and timely information on smart cards, related technologies, and smart card-enabled applications to Alliance members and the public, including private industry, government, and the public sector. The Educational Institute offers both online and classroom-based courses covering smart card technology and applications.

The Educational Institute's industry-renowned classroom programs feature expert speakers to provide participants with a solid understanding of smart card technology, standards and applications. Courses are held in conjunction with Alliance or other industry events.

The Educational Institute also offers customized courses and workshops for specific industries at Alliance and industry events.



2015 CSCIP Recipients

- Kwan Hon Luen,
BT Global Solutions Pte Ltd



2015 CSCIP/G Recipients

- Brent Arnold, XTec, Incorporated
- Thomas Casey, Intercede Limited
- Mark Dale, XTec, Incorporated
- Matthew Ernst, XTec, Incorporated
- Jason Goodloe, XTec, Incorporated
- Thomas Keady, ICF International
- Stephen Mergens, XTec, Incorporated
- John Moore, Intercede Limited
- Rishi Purohit, ICF INTERNATIONAL
- Zachary Smith,
SAIC - Science Applications
International Corporation
- Nicholas C Wryter, XTec, Incorporated

2015 CSCIP/P Recipients

- Muhammad Naumann Ahmed, TSYS
Acquiring Solutions
- Deborah Andreozzi, TSYS
- Milind Bengeri,
Discover Financial Services
- David Blust, Discover Financial Services

- Sam Boutros, ACI Worldwide
- Laura Brandenburg, TSYS
- Ben Bruno, TSYS Acquiring Solutions
- Natalie Bullard, TSYS
- Jessica Burch, TSYS
- Rico Cantrell, TSYS Acquiring Solutions
- Roberto Cardenas,
TSYS Acquiring Solutions
- Audria Crain, TSYS
- Gus Damian, TSYS Acquiring Solutions
- Cory Daugherty, First Data
- Abraham Deithloff,
Discover Financial Services
- Ana Egan, Discover Financial Services
- John Flood, TSYS Acquiring Solutions
- Abigail Floyd, TSYS
- Thomas Fluegel,
TSYS Acquiring Solutions
- Rich Goodwin,
LTK Engineering Services
- Tom Griffith, TSYS Acquiring Solutions
- Art Grijalva, TSYS
- Sandra Gunnels, TSYS
- Joseph Handschu, HQS International
- Katherine Heck,
TSYS Acquiring Solutions
- Megan Hoffer, TSYS
- Manjit Hota,
Discover Financial Services
- Jin Hwan, TSYS
- Antoine Kelman,
Oberthur Technologies
- Jenifer Kennedy, TSYS
- Alicia King, TSYS



- Patrick Marron,
LTK Engineering Services
- Stacey C McCarthy, TSYS
- Julie Minkanic, TSYS
- Janet Nash, TSYS
- Tucker Neely, TSYS Acquiring Solutions
- Andrew Patania, First Data
- Patrick Plazas, TSYS
- Ben Potter, Discover Financial Services
- Akif Qazi, Discover Financial Services
- Rodger Ransom, TSYS
- VJ Roberts, TSYS
- Lance Robinson,
TSYS Acquiring Solutions
- Tony Sabetti, Softcard
- Terry Schindler, Q-Card Company
- Jason Sheppard, TSYS
- Chadrick Sine,
SAIC - Science Applications
International Corporation
- Laurie St. Ange,
LTK Engineering Services
- Keith Stephan, TSYS
- Sean Stern, TSYS Acquiring Solutions
- Tiffany Szabo, TSYS
- Kelly Urban, First Data
- Mario Urquilla, Xtrategies, LLC
- Michael J VanBibber, TSYS
- Sanjay Varghese,
Capgemini Financial Services
- Tia Waters, Gilbarco Veeder-Root

As of June 30, 2015

For a list of all CSCIP recipients go to: <http://www.smartcardalliance.org/activities-leap-cscip-registry>



CSEIP Recipients

- Gunvir Baveja, eVigilant.com Inc.
- Kevin Beacom, HID Global
- Thirl Berry, Executive Technologies Corp
- Steve Bowen, Eid Passport Inc
- Ryan Breeden, Pentagon Force Protection Agency
- Wayne Budd, Tyco Integrated Security
- Christopher Byron, CertiPath Inc.
- Johnny E Caldwell, Johnson Controls
- Aldrich Camat, Department of Homeland Security
- Charles Campbell, Security & Energy Technology Corporation
- Jacob Cangelosi, Secure Mission Solutions
- Kathryn Captain, M.C. Dean, Inc.
- Richard Case, Systems Engineering, Inc.
- Malcolm Ceasar, Global Networks Inc.
- Tachung Chang, Integrated Security Technologies, Inc.
- Maurice Cooper, Evergreen Fire & Security
- Joe Cunetta, Brivo Systems, LLC
- Mark Dale, XTec, Incorporated
- Forrest Davenport, ICF International
- David Dersham, Evergreen Fire & Security
- Phillip Dersham, Evergreen Fire & Security
- Jesse Devitte, XTec, Incorporated
- Jeff Deweese, Tyco Integrated Security
- Ray Dickler, eMentum
- Richard Dietz, Secure Mission Solutions
- Susan Doherty, Security Install Solutions, Inc.
- Colin Doniger, Department of Homeland Security OCSO
- Christopher Downey, Stanley Security
- Nasir Durrant, Secure Mission Solutions
- Rob Edwards, Vision Technologies Inc.
- Mark Entriakin, SCI Inc.
- David Fick, Pentagon Force Protection Agency
- Patrick Finnegan, Identiv
- Mike Ford, Apex Integrated Security Solutions, Inc.
- Clyde Fox, Tyco Integrated Security
- Carlos Gaskin, Chenega
- Matt Geer, Orion Management LLC
- Jason Goodloe, XTec, Incorporated
- Steven Gray, Johnson Control Security Services
- Derek Greenland, AMAG Technology, Inc.
- Eric Grist, S2 Security
- Mala Grover, Digitronics, Inc
- Paul Hagen, Secure Mission Solutions
- Cliff Hall, Cliff Hall Consultant
- Donald Hamilton, Department of Homeland Security
- Kayee Hanaoka, NIST
- James Hansen, Chenega Corporation
- David Harris, HID Global
- Brian Havekost, Signet
- Roy Hayes, Systems Engineering, Inc.
- Jacob Haymore, Power Comm
- David Helbock, XTec, Incorporated
- Martin Hoffman, Tyco Integrated Security
- Shawn Hood, Xator Corp.
- Nathan Hott, Genesis Security Systems, LLC
- Bryan Ichikawa, Deloitte
- Nicholas Johnson, M.C. Dean, Inc.
- Charles Johnson, Johnson Controls
- Mike Kelley, Secure Mission Solutions
- Douglas Kim, Business Integra
- Quinn Knight, Department of Homeland Security - U.S. Customs and Border Protection
- Erik Larsen, Tyco
- Jorge A. Lozano, Condortech Services, Inc.
- Sean Mahoney, Department of Homeland Security - U.S. Customs and Border Protection
- Brian Mann, SETEC
- Michael Margolis, Integrated Security Technologies, Inc.
- Karen Marshall, NIST
- Matthew Martino, Business Integra
- Marcus Mathis, Security Install Solutions
- Corey McKinney, Identiv
- Joe Mikula, Tyco Integrated Security
- David Miller, Business Integra
- Brian Mooney, Genesis Security Systems, LLC
- Dan Novak, Convergent Technologies
- Cheston Obert, Department of Homeland Security - U.S. Customs and Border Protection
- Douglas Oelberg, Department of Homeland Security HQ
- Derrick Parker, Defender
- William Petre, Abbey Services
- Dwayne M Pfeiffer, Northrop Grumman IT
- John Placious, Integrated Security Technologies, Inc.
- Mike Plaugher, Tyco Integrated Security
- Daniel Reilly, Business Integra
- Doug Ritchey, Communications Resource Inc.
- Roger Roehr, Pentagon Force Protection Agency
- Miguel Andres Rojas Handal, Condortech Services, Inc.
- Robert Rolfsen, Johnson Controls
- Job Rushdan, Diamond Security Inc.
- Jeff Ryder, Tyco Integrated Security
- John Schiefer, XTec, Incorporated
- Sean Schutte, XTec, Incorporated
- Jim Sheahan, Brivo Systems, LLC
- Anthony Shields, Business Integra
- Brandy Sloan, Gallagher Group Limited
- Blake Smith, Gallagher Group Limited
- Adam Somers, M.C. Dean, Inc.
- Nigel Stewart, Secure Mission Solutions
- Darryl Stringfellow, Chenega Managment
- Lars Suneborn, Smart Card Alliance
- Jesse Tatum, Chenega
- Michael Taylor, M.C. Dean, Inc.
- Donald Thomas, Stanley Black & Decker
- Brian Thompson, Global Networks, Inc.
- Joseph Verdi, Security & Energy Technology Corporation
- JC Viricochea, Tyco Integrated Security
- Galen Weimer, Communications Resource Inc.
- Joshua Wernick, Kratos Public Safety and Security
- Jason Wills, Tyco Integrated Security
- William Windsor, Department of the Treasury
- Edward Yu, Secure Mission Solutions
- Shawn Zartman, Integrated Security Technologies, Inc.

2015 Professional Certification Trainers

GUY BERG - MASTERCARD ADVISORS | BRETT CHEMALY, DISCOVER
BRYAN ICHIKAWA, DELOITTE | GILLES LISIMAQUE, IDTP | GERALD SMITH, IDTP
LARS R. SUNEORN, SMART CARD ALLIANCE | RICK UHRIG, XTEC

GUY BERG, CSCIP Trainer **MasterCard Advisors**

Guy Berg, who is Senior Managing Consultant at MasterCard Advisors, which provides executive consulting services to issuers, acquirers, merchants and financial industry vendors, has more than twenty years of experience working in the banking and electronic payment industry specializing in payment product solutions, new technology adoption, security and fraud prevention. His experience spans across many aspects of the card payment ecosystem including merchant acquiring, terminal hardware and software development, chip operating system support, personalization systems, smart card management systems and mobile NFC. Over the past 16 years he has worked globally with EMV and NFC implementations and consulting services.

BRETT CHEMALY, CSCIP Trainer **Discover Financial Services**

Brett works for Discover Financial Services as Manager – Global Chip Products, where he manages debit implementations in the U.S market and Discover's technical components of their Global Alliances business. Prior to joining Discover, he was employed within MasterCard's Emerging Payments team based in Toronto, managing and consulting on MasterCard's chip programs on both sides of the border. Prior to that, Brett spent eight years with the MasterCard Chip Centre of Excellence based in London and Belgium where he consulted extensively across Europe and the Middle East to both issuing and acquiring institutions. Brett is a native of South Africa, holding a Bachelor of Commerce Degree from Rhodes University.

BRYAN K. ICHIKAWA, **CSCIP and CSEIP Trainer** **Deloitte & Touche LLP**

Bryan Ichikawa is a Specialist Leader for Deloitte Advisory's Cyber Risk Services group based out of Arlington, Virginia. A globally recognized expert in biometrics, smart cards, security, credentialing and

identity and access management, Bryan serves as a trusted advisor to the United States federal government and other national government clients around the world. Bryan regularly assists clients in the identification, design, integration and deployment of these technologies to deliver complete and comprehensive identity management solutions.

Bryan has contributed extensively to the Smart Card Alliance where he has held many active roles; he currently is the Identity Council chair, and also has served as vice chair of the Board of Directors. He holds two patents for data security and user privacy in communications systems and is a contributing author for "Smart Cards—Seizing Strategic Business Opportunities."

GILLES LISIMAQUE, CSCIP Trainer **ID Technology Partners**

Gilles Lisimaque is a Partner with ID Technology Partners, a leading consulting firm in Washington, DC, supporting high assurance identification solutions.

Gilles, who has more than 25 years of experience developing smart card solutions, has worked with most aspects of smart cards including chip design, manufacturing, packaging, operating system design, application development, international standards, reader interfaces, and host applications. He holds multiple patents on smart card security and smart card operating system design and has held high-level seats with numerous smart card and security forums, associations and standards bodies including AFNOR, ANSI, ISO and ISTPA (International Security, Trust and Privacy).

GERALD SMITH, CSCIP Trainer **ID Technology Partners**

Gerald Smith is a Senior Consultant with ID Technology Partners, supporting high assurance identification solutions. He has more than 30 years of experience deploying card solutions. Gerald has worked with all aspects of smart cards including chip manufacturing, packaging, operating sys-

tem design, virtual machines, application development, reader interfaces, and host applications. He is a National Merit Award recipient from the U.S. INCITS standards organization as well as an ISO project editor on smart card standards.

LARS R. SUNEORN, **CSCIP and CSEIP Trainer** **Smart Card Alliance**

Lars Suneorn is Director of the Smart Card Alliance Training Programs. Lars creates courseware and conducts the Certified System Engineer ICAM PACS (CSEIP) course that is recognized and required by GSA as a pre-requisite for suppliers participating in Federal physical access control system (PACS) projects to enable agencies to achieve HSPD-12 compliance.

During his 30-plus year career in the security industry, Lars has served in various capacities with HIRSCH Electronics and Oberthur Technologies and has become recognized as a PACS subject matter expert. Lars developed and conducted customized, agency-specific week-long training courses and courseware as well as train-the-trainer activities for a wide variety of U.S., Canadian and British security agencies at facilities worldwide.

Lars actively promotes smart card, biometric and PKI cryptographic technologies as vital components in overall system designs for high-risk, high-security government facilities nationally and internationally. He is guiding U.S. agencies in their efforts to achieve HSPD-12/FICAM compliance.

RICK UHRIG, CSCIP Trainer **XTec Incorporated**

Rick Uhrig is a Senior Manager with XTec, Inc., a leading provider of trusted products and services for authentication and security solutions. Rick has more than 30 years of experience designing, developing and evaluating information security solutions, including 15 years with smart card solutions.



PAYMENTS SUMMIT

Smart Card Alliance
The 9th Annual Conference

April 4-7, 2016

Loews Royal Pacific • Orlando, Florida USA



Co-located with the 2016
ICMA Card Manufacturing
& Personalization EXPO

NEW! Dates • Location • Partner

A Bigger Stage for Secure EMV, Mobile and Transit Payments

Get ready for the next stage of industry growth at Payments Summit, as the industry continues a remarkable evolution: The US migration to EMV is here and the Smart Card Alliance, the authoritative industry leader for EMV, will continue its comprehensive coverage of this landmark transition. Secure mobile payments are fragmenting the market--conference speakers will review a wide range of solutions being touted by technology providers, networks, telecoms and handset manufacturers. Public transportation leaders will talk about the ongoing move to standards-based contactless and mobile payments championed by the Alliance's Transportation Council. It all comes together at the leading annual event for secure payment systems. In 2016 Payments Summit will grow into an expanded facility with room for additional conference content, a larger exhibition, and a wider range of participant networking opportunities and activities. Payments Summit is co-located with ICMA Expo, presented by the International Card Manufacturers Association, the leading organization for card manufacturing and personalization.

What's not changing is the quality and reputation of the Payments Summit conference, with continuing coverage of every leading secure transaction platform: EMV card payments, mobile payments, and transit payments.

Home Base for the Ongoing EMV Migration

The US is the world's largest payments ecosystem, and the migration to EMV--the global transaction security standard--is in full swing. Yet, for many banks, credit unions, issuers and merchants there's still a frustrating lack of clarity. They know the standards are coming, but the exact form is unclear, and the cost of conversion is daunting for many.

Mobile Payments: A Game Changer?

The NFC payments market has been rocked by ApplePay. Card networks, telecoms and handset manufacturers are touting a wide range of mobile wallet solutions in a very fragmented market. There is no ubiquitous model, conversions are slow, and stakeholders are engaging multiple strategies. Some applications are challenging the secure element-centric NFC model, with the potential to upend the entire industry.

A Thought Leader in Transit Payments

Through its Transportation Council, the Smart Card Alliance has championed the use of open standards-based contactless bank card and mobile payments in public transportation. Many Council participants have implemented these technologies including Chicago, Philadelphia, The San Francisco Bay Area, Washington DC, New York City, Toronto, and Dallas.



In 2015,
628

executive delegates participated



The three-track agenda featured

77
speakers



63

exhibitors and
sponsors took part

Early registration discounts apply: www.SCAPayments.com

Pre-conference Workshops: April 4

Exhibit and sponsor marketing opportunities are available:

Contact Bryan Ichikawa: bichikawa@smartcardalliance.org or 703.582.7862.



#PaymentsSummit

CONFERENCES AND EVENTS



2015 PAYMENTS SUMMIT

Grand America Hotel
Salt Lake City, UT
February 3-5, 2015

More than 600 executives gathered in Salt Lake City to share insights and collaborate on implementing new, secure and convenient ways to pay with EMV chip cards and mobile devices in retail and transit. Almost every presenter discussing EMV chip acceptance readiness included a common recommendation — get started now. After keynote presentations and panels, discussions went deeper into the business and implementation considerations for transit, EMV chip and mobile payment, and authentication technologies emerging in the U.S.



2015 GOVERNMENT CONFERENCE

Walter E. Washington Convention Center
Washington, D.C.
June 9-10, 2015

This event on the latest trends and advancements in identity management and cybersecurity for government, healthcare and enterprise was timely, held just weeks after a data breach involving the Office of Personnel Management (OPM). While the breach wasn't a topic, it served as a fitting example of why PIV cards are necessary for strong authentication. An oft-discussed topic focused on re-energizing the federal government's efforts to use PIV credentials to secure information access and privileges.



2015 SMART CARD ALLIANCE MEMBER MEETING

Arizona Grand Resort
Phoenix, AZ
October 4-6, 2015

Created exclusively for the benefit of Smart Card Alliance and SCALA members, non-members were invited to attend this year to learn about the latest smart card industry developments. The highlight was a special awards dinner, where the Alliance recognized the many achievements by industry councils and member companies. Council chairs and members who comprised the 2015 Honor Roll and Top Contributors were publicly acknowledged, as were the 22 companies who received the Center of Excellence (COE) designation.



2015 NFC SOLUTIONS SUMMIT

Arizona Grand Resort
Phoenix, AZ
October 7-8, 2015

This event revealed the growth in mobile NFC technology, placing the number of handsets in the market that are enabled for NFC at 1 billion. It also showcased notable developments in payment and non-payment applications, customer experience and security. Presented by the Smart Card Alliance in partnership with the NFC Forum, many of the speakers highlighted new ways to use the technology, as well as opportunities across a variety of industries including access, identity and transit.

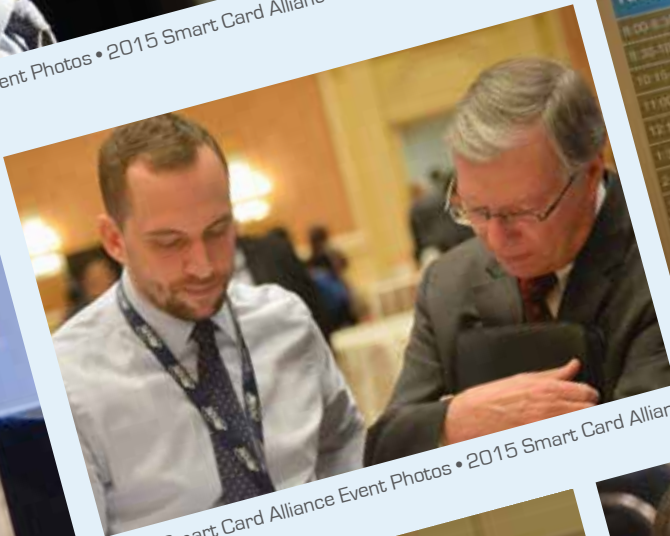
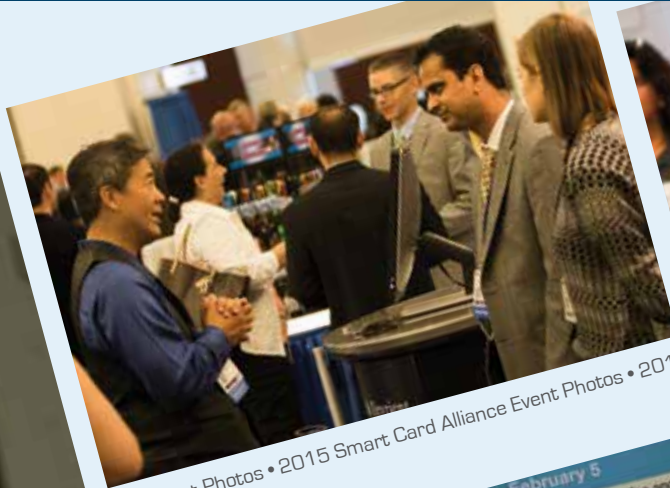
SAVE THE DATE FOR THESE 2016 EVENTS



2015 EVENT PHOTOS



Smart Card Alliance Event Photos • 2015 Smart Card Alliance Event Photos • 2015 Smart Card Alliance Event Photos



Tuesday, February 5	
8:00-8:30	Registration Coffee and Pastries
8:30-10:15	Keynote Plenary Sessions (PS11)
10:15-11:00	Conference Break in Exhibit Hall
11:00-12:15	Keynote Plenary Panel Session: Mobile Wallets Debate: NFC vs The Cloud
12:15-1:30	Conference Lunch in Exhibit Hall
1:30-2:30	Keynote Plenary Session (PS13)
2:30-3:45	Keynote Plenary Panel Session: Is There a Retailer Business Case For EMV?
3:45-4:15	Conference Break in Exhibit Hall
4:15-4:45	Keynote Plenary Panel Session: Open Loop Payment in Transit: Build it, Buy it, or Don't?
4:45-5:15	Conference Reception in Exhibit Hall
5:15-7:00	Dine-Around Downtown
8:00-9:30	
Wednesday, February 6	

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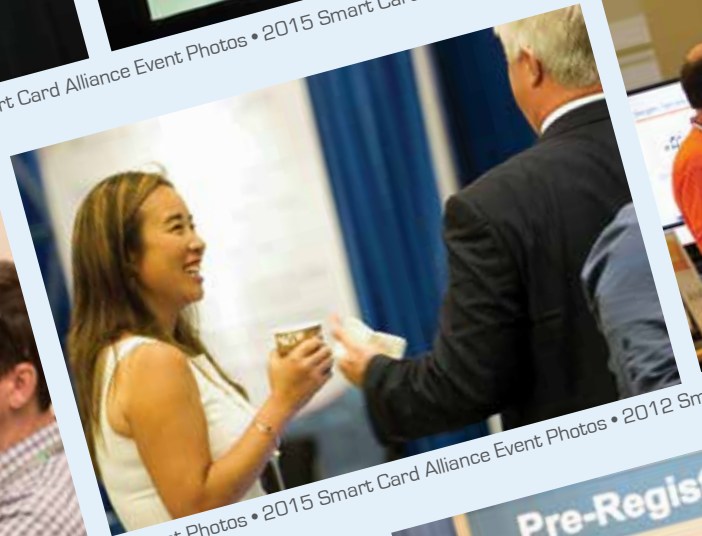


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EXECUTIVE DIRECTOR LETTER HIGHLIGHTS

One of the most popular sections of the monthly Smart Card Alliance newsletters is the letter from Executive Director Randy Vanderhoof. Check out his thoughts during a very busy year for the Alliance and the industry. To read the complete letters, visit the Smart Card Alliance website.



Countdown Begins for EMV Shift

We welcome 2015 with anticipation and trepidation, especially if your business interests are in the payments arena. This year starts the countdown to the EMV fraud liability shift in October. Those of us deep into the card payments market are nervously watching the calendar while simultaneously looking for positive signs that the much anticipated, extremely complicated, and hugely expensive EMV conversion is on track. It is hard to know for sure, because most of the big changes are happening behind the scenes in software development rooms, testing labs, and card production facilities. Only in the United States could there be 100 million new chip cards issued in a single year and nearly 5 million point of sale terminals replaced and no one would notice.



EMV Chip Migration: A Top Priority

As the industry gathered at the Smart Card Alliance's 2015 Payments Summit in Salt Lake City, two distinct themes played out frequently among the speakers. The opening keynote topics epitomized the role in each of these major themes: the progress made and expectations ahead for U.S. EMV chip migration and the rise of tokenization as another major innovation to watch on the near horizon. The collective message that came from the presentations was that while EMV migration has moved incredible lengths in the third year of a four year migration, it's been at an uneven pace for the infrastructure players, with issuers far ahead of most merchants. Further, the issuance of contact-only chip credit cards is well ahead of contactless chip cards and debit cards.



Mobile Payments Take the Spotlight

So much has been written and talked about Apple Pay's relative impact on the market that one might think that it's been the industry standard for years rather than months. In January, Softcard (formerly Isis) folded their tent and sold off the remains of the technology to Google. MCX mobile payments

platform CurrentC launched to compete with Apple Pay and PayPal. And Samsung responded to Apple's challenge by acquiring a start-up called LoopPay. Samsung Pay will also work with NFC if the terminal supports it. It will be interesting to see how these brands align and compete in chasing after the consumer. Expect that change will be a constant for mobile payments for the foreseeable future, so make sure to be informed in this evolving market.



Defining Strong Authentication

There are several definitions of strong authentication, and sometimes it gets confused with two-factor authentication. Authentication involving cryptographic responses can also be referred to as strong authentication, as in using PKI to authenticate the validity of a digital certificate using asymmetric keys. A third class of definition says strong authentication is any form of authentication in which the verification is accomplished without the transmission of a password. The [Federal Information Security Management Act \(FISMA\) report](#) defines strong authentication as authentication that requires multiple factors to securely authenticate a user: (1) something the user has, such as a Personal Identity Verification (PIV) card; (2) something the user is, such as an approved user; and (3) something the user knows, such as a password or key code.



Healthcare Warms to Security

The least mature smart card market today is the healthcare market. It hasn't benefitted from any significant drivers or extraordinary events to stimulate a rapid change in demand for secure chip cards. But it is encouraging to see the healthcare market beginning to look at security in ways similar to the government security and the consumer payments markets. Perhaps it will take another decade to get to the same level of adoption. Or some major event, like a colossal health information data breach, that will stimulate faster action. What is certain is the Smart Card Alliance will be at the center of this effort to stimulate healthcare adoption, as it has been in the consumer payments market and government ID markets.



Eliminating Cyber Threats

I've just returned from another great Smart Card Alliance Government Conference. My personal takeaways from listening to many speakers are that two-factor authentication based on almost any form factor (smart card, mobile device, or knowledge-based) is very difficult to get implemented by senior management; and we're advancing towards unsustainable levels of cybersecurity threats, with cyber threat mitigation complex and post-breach mediation extremely costly after a breach occurs. Continuing to rely on single-factor password-based security is like ignoring the red warning light on your car because you don't have the time or money to fix the problem now. After a major break down, the car towed and the cost of a more expensive repair, you see that it just doesn't add up in the end.



More ID Breaches Occur

Largely driven by the humiliating record reported in government's 2015 FISMA report – 41% of civilian agency personnel were using PIV credentials to log in – followed by the troubling announcements that two separate and massive data breaches occurred in the Office of Personnel Management (OPM), a 30-day “Cybersecurity Sprint” initiative was announced. The emergency cyber cleanup concentrates on instituting two-factor authentication; increased monitoring of networks for signs of hacking activities; and patching older systems as well securing systems to address more recent vulnerabilities. I don't think it will take more than a few months before we see a mandate for all agencies to begin using PIV cards for network log in as well as enforcement for the mandate.



Uncertainty at the Register

Carrying a wallet full of EMV chip cards and finding a merchant that accepts them reminds me of the water game “Marco Polo.” I spot an EMV chip terminal at a check-out lane (Marco) and reach out, but the chip experience disappears because the terminal is still in magnetic stripe mode (Polo). Consumers shouldn't be playing EMV Marco Polo with less than 60 days until the liability shift. The good news I heard at the RETAILNOW 2015 conference is that everyone is aware of EMV. The bad news? Resellers of retail POS hardware, software, and IT services have only an elementary level of understanding of merchant customer requirements for EMV. And these are the POS solution vendors and retail systems integrators who merchants turn to for advice and support.



The Relationship between Healthcare and EMV

There is a connection between seeing a doctor and EMV that doesn't involve your health. It has to do with doctors and health-care services providers such as hospitals, pharmacies, and medical equipment supply stores who are also merchants. They'll all be affected by the October liability shift. In healthcare, providers and hospital systems need to consider how chip technology can impact their business. And while migrating to chip is a choice, not a mandate, there are some repercussions for those who don't make the change. For those who do, they'll want to make an informed decision by understanding what chip technology is, how the fraud liability shift will impact them, and how to prepare to migrate to chip once they have everything in place.



Fraud Liability Shifts – What's Next?

While the October 2015 EMV fraud liability date came and went without much of a ripple, it's important to remember that EMV is not a solution for e-commerce fraud. Small businesses are the most vulnerable because they typically lack the added software security measures and e-commerce fraud risk tools that the bigger retailers have. E-commerce merchants shouldn't despair or feel abandoned by the banks and payments networks who have focused on the biggest fraud problem first. There are new technologies available for e-commerce merchants today that will better protect businesses. Be assured that EMV is working and will be growing in usage and effectiveness each day, bringing down the cost and inconvenience of counterfeit card fraud for banks, merchants, and consumers.



The Season of Industry Events

The calendar has turned from October to November and I am feeling thankful that my suitcase and my health survived a grueling month of air travel and hotel stays that were the result of organizing and participating in numerous industry conferences that each year are squeezed into a small window between the end of September and mid November. One thing I have learned about this time of year is that it will make you soon forget those lazy, hazy days of summer fast.

WEB SITE HIGHLIGHTS

SMART CARD ALLIANCE WEB SITE HIGHLIGHTS

- Average site visits per month: 24,448
- Number of page views per visit: 1.73
- Over 77% new visits
- Links to Alliance, LEAP and CSCIP members-only resources
- Smart Card Alliance news and member bulletins
- Smart Card Alliance event registration and proceedings

MOST POPULAR WEB RESOURCES

- Smart Card Alliance events and event proceedings
- Smart Card Alliance white papers and publications
- LEAP and CSCIP information and resources
- Smart card technology primer and application information
- EMV Migration Forum information
- Smart Card Alliance membership information

NEW IN 2015: PUBLICATIONS, WORKSHOPS, TRAINING PROGRAMS, COLLABORATION TOOLS

- [Smart Card Alliance Publications](#): Five new publications on the true cost of data breaches; EMV for the healthcare and parking industries; contactless smart card technology for commercial physical access control systems; and the benefits of strong authentication for Medicare credentials
- [Educational Institute Workshops](#): Two new workshop videos on payments technologies and innovations and strong authentication (LEAP members only)
- [CSCIP Body of Knowledge](#): Updated Body of Knowledge Modules for CSCIP, CSCIP/Payments and CSCIP/ Government certifications (CSCIP applicants only)
- [Collaboration Platform](#): New Council collaboration platform supporting document management and Council communications (Council members only)

TOP ACCESSED PUBLICATIONS & WHITE PAPERS

- [Host Card Emulation \(HCE\) 101](#)
- [Technologies for Payment Fraud Prevention: EMV, Encryption and Tokenization](#)
- [Card Payments Roadmap in the U.S.: How Will EMV Impact the Future Payments Infrastructure?](#)
- [Smart Card Technology in U.S. Healthcare: Frequently Asked Questions](#)
- [EMV: Frequently Asked Questions](#)
- [The True Cost of Data Breaches to the Payments Industry](#)
- [EMV and NFC: Complementary Technologies that Deliver Secure Payments and Value-Added Functionality](#)
- [Bluetooth Low Energy \(BLE\) 101: A Technology Primer with Example Use Cases](#)

ACTIVE SOCIAL MEDIA PROGRAMS

- LinkedIn Groups: [Government Smart ID](#)– 2,109 members; [Smart.Payments](#)– 1,564 members; [Healthcare Identity Management](#)– 180 members; [LEAP](#)– 653 members
- Twitter: 1,100+ tweets, 3,722 followers
- Facebook: 585 “likes”

EMV CONNECTION WEB SITE

- Over 123,600 visits from over 86,900 unique visitors
- EMV educational resources for issuers, merchants, acquirers/ processors and consumers
- New white papers and webinars from the EMV Migration Forum: [Understanding the U.S. Fraud Liability Shifts](#); [PIN Change at the ATM](#); [Implementing EMV at the ATM](#); [Near-Term Solutions to Address the Growing Threat of CNP Fraud](#); [Managing Card-Based Tip and Gratuity Payments](#)
- EMV Migration Forum market education resources: [Chip Card Video](#); [EMV Chip Card Infographic](#); [Recommended Communications Best Practices](#); [GoChipCard.com website](#)
- EMV Migration Forum [information](#) and members-only web site

Over 21,000
downloads of
publications and
presentations

Over 220,000
visits from over
172,000 unique
visitors

Number of
page views
per visit – 1.73

Continued
strong growth
in web site
traffic and
downloads

Member access to
event proceedings
and resources



Advantis is a multi-application operating system
based on international EMV Chip Technology standards



Its Maxims are: Flexibility and Reliability

Flexibility

MULTI-APPLICATION

- Credit/Debit
- Transport applications
- e-purse
- Data storage (loyalty, biometry, health, university, access control...)
- PKI (authentication, electronic signature)

MULTI-PROVIDER

- Various chip manufacturers
- Global and local card manufacturers
- Multitude of personalization companies

MULTI-BRAND

- Domestic
- International
 - Visa
 - MasterCard

MULTI-INTERFACE

- Contactless)))
- Contact

100% Reliability

One out of every 10 EMV financial cards in the world which is issued includes **Advantis** technology.

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INDUSTRY COUNCILS

Through six industry councils, the Smart Card Alliance proactively addresses topics of concern in the different vertical markets for smart card technology. Alliance members lead Council activities and contribute to a wide variety of projects, including white papers, webinars, workshops, web resources, position papers and industry commentary. The results of the councils' work help to drive smart card technology implementations in the U.S. and provide authoritative educational material for both the U.S. and international markets.

ACCESS CONTROL



The Access Control Council expanded activities in the commercial market in 2015, publishing a guide specification for contactless smart cards in commercial physical access control systems. The Council continued its strong support of government initiatives, submitting comments on draft specifications. The Council is made up of more than 140 individuals from 45 leading organizations.

HEALTH AND HUMAN SERVICES



The Health and Human Services Council focused on education and outreach in 2015, publishing an EMV for healthcare white paper and responding to the GAO report on Medicare. The Council was also successful in securing speaking engagements at key industry events in 2015. More than 50 individuals from over 30 leading organizations participate in the Council.

IDENTITY



The Identity Council's 2015 activities focused on strong authentication and identity management. The Council collaborated with the Access Control Council on the Government Conference workshop and worked on a white paper on smart card technology and the FIDO protocol. More than 100 individuals from over 40 leading organizations participate in the Council.

MOBILE AND NFC



The Mobile and NFC Council continued its strong educational programs in 2015. The Council hosted a well-attended webinar, led or contributed to two workshops, and worked on two white papers on both payments and non-payments applications. The Council is made up of more than 170 individuals from over 60 leading organizations.

PAYMENTS



The Payments Council continued its focus on education in 2015. The Council led a workshop on payments technology and innovations, published a white paper on the true cost of data breaches, and collaborated on a white paper on EMV and NFC. The Council is made up of more than 200 individuals from over 50 leading organizations.

TRANSPORTATION



The Transportation Council 2015 projects focused on multimodal payments convergence and EMV migration. The Council held a well-attended workshop, hosted a two-day member meeting, and collaborated with the International Parking Institute on an EMV and parking white paper. More than 180 individuals from over 60 leading organizations participate in the Council.

A LOOK AT OUR COUNCILS IN 2015

Council Member Expertise and Commitment Result in Strong Deliverables



In 2015, EMV chip migration was in full swing, contactless payments with NFC-enabled mobile devices moved to the mainstream, and data breaches continued to plague all markets. The Councils targeted each of these market topics and successfully completed projects that provided educational resources and guidance for the industry.

EMV was a common theme across our councils. With the October 2015 liability shift, EMV chip migration has been a critical topic for all merchant segments. The Transportation Council collaborated with the International Parking Institute on EMV guidance for the parking industry and continued to look at implementation considerations for transit open payments. The Health and Human Services Council reached out to payments industry members to develop an “EMV 101” for healthcare providers. And with both EMV and NFC arriving at the acceptance infrastructure, the Payments and Mobile and NFC Councils collaborated on a white paper explaining how the two technologies work together to secure payments.

Another common theme was the growing need for strong, two-factor authentication. The Identity Council developed a workshop and Member Meeting sessions on strong authentication and worked on a white paper showcasing how the FIDO protocol can be used with smart card technology. The Health and Human Services Council tackled Medicare fraud, promoting the strong authentication benefits of smart card technology for patients and providers.

While the Access Control Council continued to provide guidance to the Federal government on the use of Personal Identity Verification (PIV) cards in physical access control systems (PACS), the Council expanded efforts in the commercial market with an ISC West workshop on enterprise PACS and a guide specification on using smart card technology with commercial PACS. The Transportation Council also

looked beyond the traditional transit market to hold a cross-industry workshop and start a white paper on payments convergence across multiple transportation modes – transit, tolling, parking, and new services like ride, car and bike sharing.

All told, Councils completed over 20 different projects including four comments submissions, six workshops, one webinar, and five white papers – with five additional white papers expected to be published shortly. This a phenomenal set of activities for our volunteer organization and is a testament to the commitment of both member organizations and individuals to growing the U.S. market for smart card technology.

As you might expect from the extensive list of 2015 deliverables, we continue to have strong council participation. Council activities engage 78 percent of member organizations, with 100 percent participation from Leadership Council Members and over 60 percent participation from General and Government Members. I'd especially like to thank the 236 individuals who were active in this year's projects and the 83 individuals who are on our 2015 Council Honor Roll.

We've now had our industry councils active for over ten years and they've been successful on many levels. The councils have produced resources that helped drive smart card technology implementation and have made the Alliance the go-to resource for information. Councils are also an important factor for Alliance member satisfaction. We've had consistent results in our annual member surveys year after year – council members rate their satisfaction with the Alliance higher than members who are not involved in councils.

The Smart Card Alliance and the industry succeed through collaboration among all of the stakeholders in the ecosystems in which smart card technology plays a critical role. The councils provide the forum for this collaboration – something that members have found to be one of the most valuable parts of their Alliance membership.

Thank you to everyone who participates in our councils! I'm looking forward to another busy year in 2016.

Cathy Medich
 Director, Strategic Programs
 Smart Card Alliance

ACCESS CONTROL COUNCIL



ACCESS CONTROL COUNCIL MISSION

Accelerate the widespread acceptance, usage, and application of smart card technology for physical and logical access control.

OFFICERS

- Chair: Dave Helbock, XTec Incorporated
- Vice Chair: Frazier Evans, Booz Allen Hamilton
- Secretary: Steve Rogers, IQ Devices

STEERING COMMITTEE

- Dave Adams, HID Global
- Sal D'Agostino, IDmachines
- Tony Damalas, Stanley Security
- Frazier Evans, Booz Allen Hamilton
- Daryl Hendricks, GSA
- Dave Helbock, XTec Incorporated
- Lolie Kull, HP Enterprise Services
- Stafford Mahfouz, Tyco Software House
- Robert Merkert, Sr., Advanced Card Systems Ltd.
- Ahmed Mohammed, Oberthur Technologies
- Roger Roehr, Roehr Consulting
- Steve Rogers, IQ Devices
- Adam Shane, AMAG Technology
- Mike Sulak, U.S. Dept. of State
- Mike Zercher, NXP Semiconductors

TOP CONTRIBUTORS

- Salvatore D'Agostino, IDmachines
- Frazier Evans, Booz Allen Hamilton
- Tony Damalas, Stanley Security Solutions
- Steve Rogers, IQ Devices

HONOR ROLL

- Don Campbell, Eid Passport
- Peter Cattaneo, Identiv
- Salvatore D'Agostino, IDmachines
- Tony Damalas, Stanley Security Solutions
- Bob Dulude, HID Global
- Vince Eckert, GSA
- Frazier Evans, Booz Allen Hamilton
- Walter Hamilton, Identification Technology Partners
- Dave Helbock, XTec Incorporated
- Chi Hickey, GSA
- Mike Kelley, Secure Mission Solutions
- Lolie Kull, HP Enterprise Services
- Stafford Mahfouz, Tyco Software House
- Roger Roehr, Roehr Consulting
- Steve Rogers, IQ Devices
- Adam Shane, AMAG Technology
- Rob Zivney, Identification Technology Partners

ACTIVITIES

- [*Guide Specification for Architects and Engineers for Smart Card-based PACS Cards and Readers for Non-government PACS*](#) (April 2015)
- ISC West workshop, [*Enterprise Physical Access Control Systems \(EPACS\) Using Smart Card Technology for Government and Commercial Organizations*](#) (April 2015)
- 2015 Smart Card Alliance Government Conference pre-conference workshop, [*Best Practices and Technology Trends for Strong Multifactor Authentication and Managing Identities of People and Internet Devices*](#), in collaboration with the Identity Council (June 2015)
- Submission of response to NIST: contactless PIV use case (June 2015)
- Submission of comments to GSA on the "FIPS 201 Evaluation Program Functional Requirements & Test Cases (FRTC), Version 2.0.0" (August 2015)
- Submission of comments to NIST on draft NISTIR 8055, "Derived Personal Identity Verification (PIV) Credentials Proof of Concept Research" (August 2015)
- 2015 Member Meeting session: *Mobile Devices: Use Cases for Access* (October 2015)
- Relationships with IBIA and SIA

ACCESS CONTROL COUNCIL MEMBERS

3M Cogent • ABnote • Accenture • Advanced Card Systems Ltd. • Allegion • AMAG Technology • Booz Allen Hamilton • CertiPath • CH2M HILL • Cubic Transportation Systems, Inc. • Entrust Datacard • Datawatch Systems • Defense Manpower Data Center • Deloitte & Touche LLP • Department of Homeland Security • Eid Passport • Exponent • Gallagher • Gemalto • Giesecke & Devrient • GSA • HID Global • HP Enterprise Services • Identification Technology Partners Inc. • IDmachines • Initiative for Open Authentication • IQ Devices • Lenel Systems International • Morpho • NXP Semiconductors • Oberthur Technologies • OTI America • Quantum Secure • Roehr Consulting • SAIC – Science Applications International Corporation • Secure Mission Solutions • SecureKey Technologies • Stanley Security Solutions • STMicroelectronics • Tyco Software House • Ultra Electronics Card Systems • U.S. Department of State • U.S. Department of Transportation/Volpe Center • Wells Fargo • XTec Incorporated

YEAR IN REVIEW: ACCESS CONTROL COUNCIL CHAIR

Council Benefits Industry through Guide Specification Development

As usual, 2015 was a year full of activities for the Access Control Council. Most notably, smart cards were increasingly accepted as the credential of choice for securely authenticating identity, determining appropriate levels of information access, and controlling physical access. To further advance the adoption of high security smart card-based physical access control systems (PACS), the Smart Card Alliance guidance document, "Guide Specification for Architects and Engineers for Smart Card-based PACS Cards and Readers for Non-government PACS," helps architects, engineers, consultants, integrators, manufacturers and end users incorporate smart card-based PACS cards and readers into architectural and engineering specifications for non-government facilities.

The council has continued to engage with the federal government, specifically the National Institute of Standards and Technology (NIST) and General Services Administration (GSA), to review and comment on various documents that promote to the use of smart cards. Most recently, the Council provided comments on the GSA PACS Approved Product List (APL) Functional Requirements and Test Cases v2.0.0 and the NIST Interagency Report (NISTIR) 8055 Derived Personal Identity Verification Credentials (DPC) Proof of Concept.

One of the latest efforts underway is updating the "Federal Identity Credential and Access Management (FICAM) in Brief" white paper that the Council produced in 2010. The Council will be meeting with the GSA FICAM team to discuss the project. It's an exciting opportunity for the Council to update the "FICAM in Brief" document to align with that latest identity and smart card related technology innovations over the past five years.

In 2014, GSA approached the Smart Card Alliance about setting up a training and certification program and this resulted in the launch of our Certified System Engineer ICAM PACS (CSEIP) program. 2015 was another successful year for CSEIP training and certification. This certification has gained traction not only with the security integrators and specifiers, but also has benefited government

end-users and contract specialists. Representatives from more than 50 different organizations have attended the course since its inception.

During ISC West in Las Vegas this past spring, the Access Control Council hosted a one-day event: the "EPACS Using Smart Card

Technology" workshop. The content was developed by the Council and provided a comprehensive understanding of the new PACS architectures, the use of high assurance credentials with EPACS, and the impact that this move has on PACS implementation. Many members of the Council volunteered to provide presentation materials as subject matter experts to brief the class during

their respective sessions. Two GSA employees attended the event as speakers. They briefed the class on the Approved Products List (APL) process, contracting information on specifying an EPACS, and PIV authentication in PACS progress.

All indications are that 2016 will be just as busy and exciting! Many of the projects the Council is involved in require collaboration and corroboration with industry organizations and the federal government, with whom we enjoy very productive partnerships and who contribute greatly to our joint successes.

Thank you to all of you who continue to support and contribute to the Access Control Council!

The council has continued to engage with the federal government ...to review and comment on various documents that promote the use of smart cards.

David Helbock, Jr.
Sr. Sales Engineer
XTec Incorporated



Guide Specification for Architects and Engineers for Smart Card-based PACS Cards and Readers for Non-government PACS

Smart cards are increasingly accepted as the credential of choice for securely authenticating identity, determining appropriate levels of information access, and controlling physical access. To further advance the adoption of high security smart card-based physical access control systems, the Smart Card Alliance developed a tool that can help architects, engineers, consultants, integrators, manufacturers, and end users include the specifications for a physical access control system (PACS) that relies on smart cards and readers in the architectural and engineering specifications developed for private-sector facilities. The tool is offered in the form of a sample specification, the [“Guide Specification for Architects and Engineers for Smart Card-based PACS Cards and Readers for Non-government PACS.”](#)

The sample specification is for 13.56 MHz contactless smart card technology products. The specification is written using industry standard formatting and language (e.g., Construction Specification Institute (CSI) Division 28 – Electronic Safety and Security Section 28 13 Electronic Security System), and is designed for use by architects, consultants, and specifying engineers who are preparing bid specifications for physical access control, building control, and security systems for non-government facilities. It includes sections that cover the specific requirements for different types of smart card readers and access control credentials.

The guide specification is a Microsoft Word document, which can be copied into the appropriate sections of a bid specification by cutting and pasting relevant portions. At anyplace in the specification where choices should be made or where project-specific information should be inserted, the choice or information required is described and enclosed in brackets. An annotated version of the specification is also available to provide guidelines for its use. Because the annotated version is intended to be an educational resource, it includes links to extensive commentary that describes or defines both the terminology used and the content required, offers guidance on different technology options that may be selected for implementation and provides information on PACS security features.

The specification delineates the requirements for use of modern, secure smart card technology in PACS applications. It focuses on the card-to-reader operations and is intended to work with a wide variety of commercial PACS. The specification assumes that the card data model is designed in accordance with the specific PACS being implemented. Because successful security deployments are a shared responsibility by all participants in the solution supply chain, proper installations must not only meet the requirements of the specification but also delineate the responsibilities of the manufacturer, integrator, and end user to deploy, operate, and maintain

the PACS. These responsibilities should be clearly defined in the project documentation and associated processes and procedures and are not part of the specification.

Use of the guide specification does not guarantee performance. Performance is the result of many factors, including, but not limited to, how the system is deployed, the environment into which it is being deployed, and how it is used. The products covered by the specification focus on PACS applications, and references to commercially available products are included as appropriate. Access control credentials and accessories are included. The specification does not endorse any specific product or service. Product or service references are provided simply as examples.

It is important to note that the specification was designed to be used for commercial, non-government PACS implementations. The guide does not apply to and should not be used for federal facilities. It should also be noted that the guide is a living document, maintained by the Smart Card Alliance Access Control Council. The Smart Card Alliance anticipates that there may be questions and interpretations that arise when using it, and the Access Control Council is prepared to respond to such inquiries. The Council is focused on accelerating the widespread acceptance, use, and application of smart card technology for both physical and logical access control. For this purpose, the Council brings together leading users and technologists from both the public and the private sectors in an open forum to work on activities that are important to the access control community.

ABOUT THE GUIDE SPECIFICATION

This guide specification was developed by the Smart Card Alliance Access Control Council to provide a tool for architects, engineers, consultants, integrators, manufacturers, and end users to incorporate smart card-based physical access control cards and readers into specifications for non-government PACS implementations.

Smart Card Alliance members who contributed to this resource include Advanced Card Systems, Ltd.; Allegion; AMAG Technology, Inc.; Booz Allen Hamilton; CH2M HILL; Eid Passport Inc.; GSA; HID Global; HP Enterprise Services; Identification Technology Partners, Inc.; Identiv; IDmachines; IQ Devices; NXP Semiconductors; Oberthur Technologies; Quantum Secure Inc.; Roehrh Consulting; Secure Mission Solutions; Stanley Security Solutions; Tyco Software House; U.S. Department of State; XTec Incorporated

EPACS Using Smart Card Technology for Government and Commercial Organizations

Traditional physical access control systems (PACS) are evolving to an enterprise architecture, with government and commercial organizations increasingly using smart card technology for high assurance identity verification. The Access Control Council hosted a full-day workshop at ISC West in 2015 to provide practical guidance for organizations who are seeking to understand how PACS architectures are changing and how to implement standards-based credentials using smart card technology.

The workshop opened by defining the enterprise PACS (EPACS). An EPACS addresses the need for access control solutions across multiple organizations and organizational boundaries and allows enterprise personnel to authenticate their identities using secure, PKI-enabled and/or standards-based credentials. EPACS are identity-centric vs. facility-centric implementations, requiring changes to traditional thinking about PACS implementations. The Federal government has led the way with EPACS implementation, pioneering “strong” authentication mechanisms using Personal Identity Verification (PIV) and PIV-Interoperable (PIV-I) credentials to reduce vulnerabilities and mitigate threats.

Smart card technology delivers multiple benefits to PACS implementations. A multitude of standards, guidance, and policies have been published in recognition of the advantages of smart cards over legacy/traditional identity tokens (e.g., RFID/prox tags, magnetic stripe cards). The cryptographic infrastructure has been established to support the issuance, maintenance and use of PIV, PIV-I and Commercial Identity Verification (CIV) smart cards in both the government and commercial sectors. Interoperability standards have also been defined to accommodate PIV-based smart cards beyond the Federal government to include commercial, state, local, and international user populations and associated identification, for both logical and physical access control needs.

The workshop included sessions on:

- How smart card-enabled authentication mechanisms mitigate threats to PACS
- How an EPACS can be deployed within an organization’s IT infrastructure and what IT requirements need to be met by EPACS
- What standards are being used in EPACS and what changes are expected to standards
- How mobile devices can be used as the platform for carrying identity credentials and authenticating individuals
- What Federal government EPACS procurement processes are
- What best practices to use when implementing EPACS and identity credentials based on smart card technology



The workshop closed with a discussion of the critical points that are essential a successful EPACS implementation. The PACS is a significant security component of any enterprise and essential to the overall security protection environment. The PACS must be interfaced to the enterprise identity management system (IDMS) and card management system (CMS); it is critical for an organization’s physical security and IT security offices to work together on the EPACS implementation. The EPACS must be integrated with the IT infrastructure and leverage the enterprise logical access control protocols. In addition, it is a standard security industry practice to integrate other countermeasures such as closed circuit television (CCTV) and intrusion detection systems as well. And finally, the use of standards-based smart card technology for identity credentials provides strong security benefits for both logical and physical access control systems.

ABOUT THE WORKSHOP

The Access Control Council produced the “EPACS Using Smart Card Technology for Government and Commercial Organizations” workshop to provide systems integrators and government and commercial PACS end users with a comprehensive understanding of the new PACS architectures, the use of high assurance credentials with EPACS, and the impact that this move has on PACS implementation.

Smart Card Alliance members presenting in the workshop included: AMAG Technology; Booz Allen Hamilton; GSA; IDmachines; IQ Devices; Quantum Secure; Roehr Consulting; Stanley Security Solutions; Tyco Software House; XTec Incorporated

HEALTH AND HUMAN SERVICES COUNCIL



HEALTH AND HUMAN SERVICES COUNCIL MISSION

Promote the adoption of smart cards for healthcare and human services applications and within the national health IT infrastructure and educate the healthcare market on why smart card technology is the appropriate solution for healthcare identity management applications.

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- Vice Chair: David Batchelor, LifeMed ID

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- David Batchelor, LifeMed ID, Inc.
- John Ekers, ABnote
- Morgan Richard, XTec Incorporated
- Jim Zalnasky, Oberthur Technologies

ACTIVITIES

- National Association of Healthcare Access Management (NAHAM) 2015 conference: speaker (April 2015)
- [*EMV 101 for the Healthcare Industry*](#) white paper (September 2015)
- [*The Benefits of Strong Authentication for the Centers for Medicare and Medicaid Services*](#), response to the GAO report, *Potential Uses of Electronically Readable Cards for Beneficiaries and Providers* (September 2015)
- American Health Information Management Association (AHIMA) 2015 conference: speaker (September 2015)
- 2015 Member Meeting session: *Council Roundtable* (October 2015)
- Speaking proposal submissions for Institute for Healthcare Improvement (IHI), Medical Group Management Association (MGMA), Healthcare Financial Management Association (HFMA) and Healthcare Information Management Systems Society (HIMSS) conferences
- Healthcare ID/payment convergence white paper, project in process
- Relationships with HIMSS, Medical Identity Fraud Alliance (MIFA), NAHAM, Secure ID Coalition and Workgroup for Electronic Data Interchange (WEDI)

HEALTH AND HUMAN SERVICES COUNCIL MEMBERS

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YEAR IN REVIEW: HEALTH AND HUMAN SERVICES CHAIR

Identity Management Solution One Piece of Resolving Complexities within the Industry

In 2015, the Health and Human Services Council educated interested parties about the importance of strong authentication and the use of smart cards for hospital workflow automation and recommended the use of smart cards for Medicare and Medicaid fraud reduction. One of our priority projects was to submit a response to the GAO report on “Potential Uses of Electronically Readable Cards for Beneficiaries and Providers,” supporting the benefits of strong authentication for Medicare. The Council also presented at the NAHAM conference and published a new white paper, “EMV 101 for the Healthcare Industry,” one of the first educational white papers on the topic.

The Council has been working to educate the healthcare industry and promote the benefits of smart card technology to address healthcare industry challenges. The Council’s focus was on developing products, such as white papers and visual graphics, that promote the vision of the Smart Card Alliance and aid member companies in pursuing identity management business within healthcare.

THE CURRENT STATE OF HEALTHCARE IDENTITY MANAGEMENT

The current healthcare environment is a complex, fragmented and highly regulated network. A number of converging factors highlight the need to rethink the current models of operation for public and private organizations, and there is no “silver bullet” to solve all of the current challenges. Key areas needing attention include:

- Patient identity
- Patient healthcare record management
- Medical identity theft
- Medical fraud
- Patient privacy
- Security and portability of identity and healthcare records

It is evident that key tasks in creating healthcare policy are to solve the problems of properly identifying patients and healthcare providers, matching healthcare records, and identifying those that

An identity management solution is not the only solution for solving all patient and electronic medical record management problems; however, it is the cornerstone for any solid solution to be implemented. Smart card technology has already been globally proven to be effective at protecting identity, privacy, and commerce in today’s Internet-era world, and is well-suited to the challenges of the American healthcare system.

have authorized access to them. An identity management solution is not the only solution for solving all patient and electronic medical record management problems; however, it is the cornerstone

for any solid solution to be implemented. Smart card technology has already been globally proven to be effective at protecting identity, privacy, and commerce in today’s Internet-era world, and is well-suited to the challenges of the American healthcare system. Currently, countries such as Germany, France, Austria, Belgium and the Czech Republic have issued national healthcare cards.

FUTURE PROJECTS

Future projects for the Council include creating a visual graphic that describes the future vision of the use of smart cards in health-

care, speaking at the 2016 HIMSS conference, and continuing to build relationships with healthcare organizations like WEDI and HIMSS. The Council is also focused on educating the market on identity management, and is working on a white paper tentatively titled “EMV Convergence.” Also along the lines of education, the Council will continue to educate the community on the importance of strong authentication using smart card technology, evaluate new ideas for projects, and define new projects.

We look forward to another successful year for the Council and welcome new participation. Thank you to all of the current Council members who participate on conference calls and contribute to projects. This Council would not be successful without your dedication, belief in the future of identity management, and hard work.



Morgan Richard
Manager, U.S. Health Care
XTEC Incorporated

The Benefits of Strong Authentication for the Centers for Medicare and Medicaid Services

To help the Centers for Medicare and Medicaid Services (CMS) both improve authentication of beneficiary and provider information at the point of care and secure access to sensitive medical and insurance data, the United States Government Accounting Office (GAO) wrote a report, [“Potential Uses of Electronically Readable Cards for Beneficiaries and Providers”](#), suggesting that electronically readable cards could provide substantially more rigorous authentication, reduce reimbursement errors, and improve medical record-keeping. The report, issued in March 2015, details the issues CMS faces regarding beneficiary and provider identification, security standards, and financial losses due to fraud.

This Smart Card Alliance response endorses strong authentication for beneficiaries and providers and discusses the benefits. The Alliance believes that electronically readable cards will enable the CMS to maximize the security of individual interactions. Verifying the identity of an individual and securing a transaction are vital to preventing fraud, maintaining record accuracy, and reducing risk at the point of care. An electronically readable card can provide strong (rigorous) authentication and enable the CMS to use digital identities to automate record matching, increase patient safety, reduce paper file transactions, and allow the correct ICD-10 codes to be linked to the correct insurance information. Smart card technology is well suited for use at CMS.



CMS ISSUES AND ALLIANCE RESPONSES

Strong authentication requires more than a password or an ID number on a beneficiary card. Strong authentication combines multiple factors (e.g., something you have, such as a cryptographic smart card, and something you know, such as a PIN) and is implemented in a way that validates identity information and links the person's identity to the card. Resulting transactions can be signed digitally, ensuring data integrity throughout the system when ex-

changing medical information and conveying identity and insurance information to providers.

FRAUD REDUCTION

One of the challenges facing the CMS are the increasing financial consequences of fraud. The most obvious example of how strong authentication can reduce fraud is the establishment of beneficiary identity at the point of care. This authentication ensures that the beneficiary receiving care is the beneficiary who should be receiving care, eliminating fraudulent use of benefits. When transaction data are signed and encrypted, beneficiary data is protected throughout the transaction. The Alliance response lists six additional situations in which fraud can be avoided. Strong authentication using electronically readable cards creates the foundation for fraud prevention.

DATA INTEGRITY

The GAO report concludes that “electronically readable cards would have a limited effect on program integrity, but could aid administrative processes.” This position is based on a view of electronically readable cards that ignores the post-processing opportunities offered by a strongly authenticated transaction.

The electronically readable card is integral to the Medicare infrastructure and transaction chain. The impact on fraud resulting from an absence of system-wide data integrity will be substantial. Additional benefits not considered in the GAO report include fraud reduction due to strong authentication of providers and a more efficient way to manage claims processing.

CONCLUSION

Through electronically readable cards, the CMS can maximize the security of individual interactions with sensitive CMS data. The move forward can be achieved with incremental steps that will not require a complete overhaul of the existing CMS infrastructure. As the GAO report notes, electronically readable cards should be considered a future solution for CMS; recognition and acceptance of this technology are the simplest and most affordable first steps to increasing security and reducing fraud.

ABOUT THE RESPONSE

This [response](#) was a product of the Smart Card Alliance Health and Human Services Council. The Council brings together human services organizations, payers, healthcare providers, and technologists. The Health and Human Services Council provides a forum where all stakeholders can collaborate to educate the market on the how smart cards can be used and to work on issues inhibiting the industry.

EMV 101 for the Healthcare Industry

The process of making a payment with a credit or debit card in the United States is moving to the use of chip cards based on a global payment standard, EMV. An EMV chip card contains a secure computer chip that validates the authenticity of the card and includes a one-time security code in every transaction. U.S. issuers and merchants are migrating to EMV chip card technology to improve the security of card-present transactions and the card-present payments infrastructure. As a result, EMV is also being rolled out to healthcare providers of all sizes, including small practices, large providers, and hospital systems.

While businesses are not required to accept EMV chip cards, the global payment networks and certain U.S. debit networks are encouraging issuers and merchants to migrate to EMV technology by shifting the liability for fraud to the non-EMV compliant participant in a transaction. This liability shift affects both counterfeit card transactions and certain lost or stolen card transactions. The migration to EMV means that the magnetic-stripe bank cards and point-of-sale (POS) terminals that have been in use for decades need to be upgraded to support chip transactions.

To accept EMV chip credit and debit cards, healthcare providers will need to update their payment terminals. Providers whose bank card payment software is integrated with other registration or administrative software may also have to update their software.

The Smart Card Alliance white paper, [“EMV 101 for the Healthcare Industry,”](#) was published to help prepare the industry for EMV migration.

POTENTIAL UPGRADE ADVANTAGES

EMV is only one of the changes coming to the payments industry. Mobile payment using smart phones and watches is also becoming popular. Providers can therefore take advantage of the requirement to install new EMV-compliant POS systems by incorporating other payments changes at the

same time. The new systems make providers both EMV-compliant and capable of accepting additional types of payment.

Another consideration is that chip-enabled terminals can support multiple applications. For example, a terminal can both accept EMV chip credit and debit cards and provide support for upcoming healthcare mobile and ID chip card acceptance as well.

When upgrading current POS systems to EMV, providers should develop their payment and point-of-service strategy and consider including support for other payment types (e.g., mobile payments) and additional functionality in the upgrade.

POTENTIAL UPGRADE IMPACT

EMV chip acceptance can affect three areas that are of particular importance to physicians, dentists, orthodontists, and other providers, as well as to hospital systems.

CONSUMER/PATIENT RECEIVABLES

The changes in healthcare payment types and transaction amount increase the threat to healthcare providers and healthcare systems of fraudulent and counterfeit card transactions. Understanding and implementing an EMV-compliant payment process will enable healthcare providers to dramatically reduce these risks for card-present payments.

CONSUMER/PATIENT EXPERIENCE

The growth of high deductible healthcare plans has led to increases in the amount consumers pay for services and the requirement that providers be consumer-focused beyond delivering superior patient care. Superior care must also be extended to patient payments. In addition, the EMV payment process is new to both patients and employees. The process of paying with an EMV chip card is different than the process of paying with a magnetic stripe card. Finally, providers need to be prepared to accept consumer payments in all forms, including mobile and digital transactions.

FINANCIAL DATA SECURITY

With the rapid growth of consumer payments, financial data security is a paramount concern, as is continuing to protect and secure patient information. It is important for healthcare providers to protect consumer financial data throughout the entire system. Three components help ensure card data security:

- EMV chip technology
- Encryption
- Tokenization

A layered approach to security incorporating all three technologies – EMV, encryption, and tokenization – is a recommended payments industry best practice to more fully secure the payments infrastructure.

PREPARING FOR EMV COMPLIANCE

To prepare for the move to chip cards, providers must consider multiple issues:

- The different mechanics and process involved in presenting and accepting chip cards
- Hardware and software upgrade requirements
- The addition of other POS functionality

Healthcare providers should consult their acquirers and POS solution vendors to acquire EMV chip-enabled solutions and to start planning for EMV chip migration.

ABOUT THE WHITE PAPER

The Smart Card Alliance Health and Human Services Council developed this white paper to provide an educational resource on EMV chip migration for the healthcare industry. The white paper provides an overview of EMV chip technology to help prepare the healthcare industry for EMV migration.

Smart Card Alliance members who contributed to the white paper include ABnote; First Data Corporation; LifeMed ID Inc.; NXP Semiconductors; XTec Incorporated.

IDENTITY COUNCIL



IDENTITY COUNCIL MISSION

Promote best policies and practices concerning person and machine identity, including strong authentication and the appropriate authorization across different use cases.

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- Gary Moore, XTec Incorporated
- Roger Roehr, Roehr Consulting
- Chad Sine, SAIC – Science Applications International Corporation
- Chris Tayler, Entrust Datacard

ACTIVITIES

- 2015 Smart Card Alliance Government Conference pre-conference workshop, [Best Practices and Technology Trends for Strong Multifactor Authentication and Managing Identities of People and Internet Devices](#), in collaboration with the Access Control Council (June 2015)
- 2015 Member Meeting sessions: *New, Improved, and Secure Ways to Perform Remote Identity Proofing: FIDO and Multi-Factor Authentication* (October 2015)
- *FIDO and Smart Card Technology* white paper, project in process

IDENTITY COUNCIL MEMBERS

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YEAR IN REVIEW: IDENTITY COUNCIL CHAIR

Strong Authentication - Déjà Vu All Over Again

As I look back over what transpired this past year, and compare notes with my observations from last year, it seems that it was the same story all over again this year. Except that data breaches were more incredible and more dramatic, and they certainly haven't slowed down.

It's as if data breaches are now becoming commonplace and no longer news worthy. But they continue and they are incredibly consistent with patterns of old. Last year, I reported that *"these breaches come in a wide variety of cases. Some are based on malware, some are attacks on the infrastructure, and some are insider jobs. The information leaked represents a wide variety of data. They are personally identifiable data such as your Social Security number, some are user ids and passwords, some are financial information, and some are purely personal, like your photo collection. The results of personal and private information compromise can range from irritating to embarrassing to financially disastrous."* That statement has not changed in the course of this past year.

What has changed, in my opinion, is awareness. As I journey through events, attend meetings, and have conversations with customers and peers, I sense an increased awareness of the fact that strong authentication is an urgent requirement.

The June 2015 announcement of the United States Office of Personnel Management (OPM) breach has been described as one of the largest data breaches in the history of the United States.¹ The types and amounts of data compromised resulted in a call for swift action from the White House. Federal CIO Tony Scott launched a 30-day "cybersecurity sprint," instructing federal agencies to immediately take steps to further protect Federal information and assets and improve the resilience of Federal networks.

Two of the steps specified in the cybersecurity sprint memorandum included the tightening of policies and practices for privileged users and dramatically accelerating implementation of multi-factor authentication, especially for privileged users. These steps speak to the core of arguably one of the more highly exposed breach target areas. Paying attention to strong authentication for privileged users is now front and center on the attention stage.

And the end user is also learning from this experience. The everyday user typically will not have an understanding of what "multi-factor authentication" means. Those words have been, for the most part, technical jargon with no meaning. But with the events of this past year, the notion of stronger authentication now has increased meaning in the public domain.

October 2015 was the deadline for merchants to accept the new EMV smart cards for credit and debit transactions. As that technology continues to roll out, I attentively observe the reaction of customers at retail locations as they use the new chip technology. I also observe my own experience as merchants provide customer assistance with the new process that is now taking place at the checkout counters. My key observations are threefold. First, it is obvious that customers, in general, do not embrace change. The new process is very different, it takes more time, and because not all retail locations have implemented EMV and not all cards contain chips, the check-out experience is not consistent. Second, regardless of the new "inconvenience" customers are experiencing at checkout, there appears to be a general acceptance that these new procedures are required to improve security and are therefore acceptable. Finally, I am personally impressed by the awareness and guidance that many retail clerks provide to their customers. It was only a few months ago that I was asking clerks about the new chip card slot in their point-of-sale devices and received only shoulder shrugs.

Last year, as we looked forward to 2015, we expected that the number and severity of breaches would not subside; rather they would increase. This has proven to be true. We observed that the criminal element was not sleeping and was increasingly pervasive across all industries in their persistence and perseverance. And they are. As we look forward to 2016, I suspect that the nature of attacks will change. The game is changing rapidly and the defenses are getting better. Implementing improved authentication technologies is on the rise. Protecting privileged access is getting better. Education and awareness are on the rise. And as we shore up our front line defenses, we are going to start to see new attack vectors. The insider threat will likely become the next focus area, and continuing diagnostics and mitigation will begin to play an important role in our cybersecurity defenses.

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Bryan K. Ichikawa
Specialist Leader | Deloitte Advisory
Deloitte & Touche LLP

¹ <http://www.cnn.com/2015/06/22/politics/opm-hack-18-million/index.html>

MOBILE AND NFC COUNCIL



MOBILE AND NFC COUNCIL MISSION

Raise awareness and accelerate the adoption of payments, loyalty, marketing, promotion/coupons/offers, peer-to-peer, identity, access control, transit and other applications using Near Field Communication (NFC).

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- Sridher Swaminathan, First Data
- Sastry Yeleswarapu, Capgemini
- Tom Zalewski, MozidoCorFire

ACTIVITIES

- 2015 Payments Summit workshop, [*Payments Technologies and Innovations Workshop: Payment Strategy Considerations for Issuers, Retailers and Transit Agencies*](#), in collaboration with Payments and Transportation Councils (February 2015)
- [*Host Card Emulation \(HCE\)*](#) webinar (June 2015)
- 2015 Member Meeting sessions: *Mobile Payments Landscape; Biometrics Authentication on Mobile Devices* (October 2015)
- 2015 NFC Solutions Summit Workshop, *Implementation Considerations for NFC and other Mobile Technologies: Payments and Beyond* (October 2015)
- *NFC Non-Payments Uses Cases* white paper
- *EMV and NFC* white paper, in collaboration with the Payments Council
- Relationships with GlobalPlatform and NFC Forum

MOBILE AND NFC COUNCIL MEMBERS

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YEAR IN REVIEW: MOBILE AND NFC COUNCIL CHAIR

NFC Mobile Payments Dominate Headlines with Platforms Poised for Expanded NFC Services

As I began to write this year's review, I started to reflect on some of the key events in the past five years as they relate to mobile and NFC and how I have had the privilege of being deeply involved in this mobile journey. Keeping aside the numerous small scale pilots, commercial deployment of NFC-based mobile payments in the U.S. started with Google Wallet in 2011, followed by Softcard in 2012 and Apple Pay in 2014.

This year, the momentum around mobile payments has continued, especially in the U.S., with Google acquiring Softcard and revitalizing Google Wallet as **Android Pay** and Samsung acquiring LoopPay and launching **Samsung Pay**.

These three services combined (Android Pay, Apple Pay and Samsung Pay) have the potential to reach an estimated 650 million NFC-capable devices in the market. And with more than 500 different smartphone models/variants that have NFC capability, the average smartphone buyer will be hard-pressed to purchase a smartphone that is not NFC-capable. And this is exactly where the industry has wanted to go – towards ubiquitous availability of NFC on all popular mobile devices with choice of wallet applications.

In addition, there appears to be some form of standardization with these services – like the use of tokenization and enhanced user authentication mechanisms (like fingerprint) to enhance security, and simplified user experiences – making it as simple as taking a photo of your plastic card to load your existing card into these wallets and use it with the all-familiar “tap and go” to conduct transactions. The immediate benefit with such uniformity is the ease of consumer education which will influence consumer adoption.

It is also important to understand that the purpose of these services isn't to become a leader in the payments space or to disrupt incumbent payment giants (evidenced by the close collaboration with payment networks and financial institutions for the launch of these services), but rather to support the continued growth of their respective platforms and further expand their consumer reach with connected accessories like Apple Watch, Android Wear and Samsung Gear. We can also expect these services to go beyond payments and further enhance the user experience with value-

added services like loyalty and offers, that will further incentivize shoppers and personalize their shopping experiences.

Within the Mobile and NFC Council, we published a white paper titled “Host Card Emulation (HCE) 101” which was very well received. To further educate the industry and bring clarity on the

topic this year, the council developed and conducted a Host Card Emulation webinar which was well attended and received positive feedback. In addition, Council members came together to work on a white paper on *NFC non-payments use cases*, and developed sessions for the NFC Solutions Summit workshop, *Implementation for NFC and other Mobile Technologies: Payments and Beyond*.

With more than 500 different smart phone models that have NFC capability, the average smart phone buyer will be hard-pressed to purchase a smart phone that is not NFC-capable. And this is exactly where the industry has wanted to go – towards ubiquitous availability of NFC on all popular mobile devices with choice of wallet applications.

Also, our cross-council collaboration and activities continued and led to the following joint efforts:

- *2015 Payments Summit workshop, Payments Technologies and Innovations: Payment Strategy Considerations for Issuers, Retailers and Transit Agencies,” in collaboration with Payments Council*
- *EMV and NFC white paper in collaboration with Payments Council*

I continue to see active participation in Council projects and cross-council activities and thank all our Council members for bringing together their combined knowledge, experience and insights. We are definitely having a positive impact as a group and I look forward to working with you all on the next set of exciting initiatives.

Sadiq Mohammed

Senior Business Leader and
Vice President, Emerging Payments,
MasterCard



NFC Non-Payments Use Cases

Near Field Communication (NFC) is a technology that enables short-range wireless data transfer between smartphones and similar mobile devices. NFC operates at 13.56 MHz and complies with currently prevalent wireless communication standards, including ISO/IEC Standard 14443. Communication is restricted to ranges of 10 cm or less.

NFC is widely available for a variety of devices, including Android, Windows, iOS, and Blackberry devices. According to the NFC Forum, NFC is supported in over 330 phone models, tablets, and other mobile devices, with one billion devices in market now and over two billion estimated to be in market by the end of 2016.

NFC can be implemented in three different modes—reader/writer, peer-to-peer, and card emulation—and can be used for a variety of purposes. Standards define and support the requirements for operation in each of the three different modes. Depending on use, the NFC ecosystem includes a variety of participants, including mobile network operators, service providers, chipset manufacturers, standards organizations and application developers, as well as end users.

Currently, mobile NFC devices are well-known for their use for contactless payments. This white paper explores the use of NFC for non-payment applications by describing use cases that demonstrate the efficacy of NFC in each particular case. Security and implementation issues are described both in general and in the context of each particular use.

USE CASES

The white paper discusses different marketing, identity and access, ticketing and gaming use cases, with each use case describing value propositions, ecosystem participants, and implementation considerations, and identifying real-world examples. The use cases are categorized by industry:

- Retailers or other vendors can replace paper loyalty cards, coupons, and other special offers or promotions with digital versions that the customer carries in a mobile wallet and uses with the payment tap.
- The hospitality industry can replace physical room keys or passes with digital ones, controlling access to guest rooms, VIP suites, and other limited-access areas.
- The airline industry can speed up travel, replacing boarding passes and baggage tags, and sell ancillary services (such as priority boarding or ground transportation).
- Physical access control applications can issue identification credentials to a mobile device and support hotel property management systems, campus residence door control systems, student identity and privilege management systems, and enterprise physical access control systems.
- The automobile industry can implement keyless entry and

ignition. An app on an NFC-enabled device can turn the device into a vehicle key, enable ignition and implement user-specific environmental settings.

- The healthcare industry can use NFC to augment current electronic medical records systems. NFC tags incorporated into wearables (such as a wrist band) or on equipment can be read using a small, handheld scanner or similar device, improving control and efficiency. Patient registration and home-based condition monitoring and management can also be supported.
- The transit industry can use NFC for ticketing and payment. Both closed- and open-loop access credentials can be virtualized and carried on a mobile device.
- The entertainment industry can allow consumers to select, purchase, and present tickets required to access an event using a mobile device. Purchased tickets can be delivered over the air and validated or canceled using the NFC interface.
- The gaming industry is expanding uses for NFC. NFC can be used to place a character figure in a game by reading the figure's tags and "importing" the character represented by the figure into the game as a playable character. NFC also allows multiplayer games to be conducted on two different devices.

ISSUES COMMON TO ANY USE CASE

While each use case describes implementation issues specific to that particular use, one common implementation issue is security: how to protect user credentials or other sensitive data in the inherently insecure environment of a mobile device. General security issues raised by each mode are highlighted and use of a secure element or host card emulation and other supplemental security approaches are discussed.

Other common implementation issues addressed by the white paper include infrastructure challenges, absence of consistency across device types, accessibility or availability of NFC-enabled mobile devices, and lack of industry-wide standards.

ABOUT THE WHITE PAPER

This white paper was developed by the Smart Card Alliance Mobile and NFC Council to highlight NFC non-payments use cases that must secure some form of user credential and that have real-world implementations that can illustrate the benefits of the technology in different markets.

Smart Card Alliance members who contributed to the white paper include: Advanced Card Systems Ltd.; AT&T Mobility; Booz Allen Hamilton; Capgemini; CH2M HILL; Consult Hyperion; CPI Card Group; Cubic Transportation Systems; Discover Financial Services; First Data; Gemalto; IQ Devices; MasterCard; NXP Semiconductors; TSYS; UL; Verifone; Wells Fargo.

Host Card Emulation (HCE) Webinar

Near Field Communication (NFC) is a short-range communication technology that is used for a variety of applications, such as payment, ticketing, access, loyalty, and coupons. Until recently, NFC applications using the card emulation mode required applications and credentials to be stored inside a hardware-based secure element (SE) on the mobile device.

Host card emulation (HCE) enables NFC devices to perform contactless transactions in card emulation mode when the application and credentials are stored somewhere other than the SE: e.g., in the cloud, in a trusted execution environment (TEE) on the mobile device, or in a virtual, software-based infrastructure on the mobile device.

Credentials are first tokenized, then stored on the mobile device. Network connectivity is only needed during provisioning and token replenishment.

HCE is viewed to have a number of advantages: reduced complexity for NFC application developers; easy and flexible credential provisioning to mobile devices; and elimination of the dependency on the mobile network operator or SE owner.

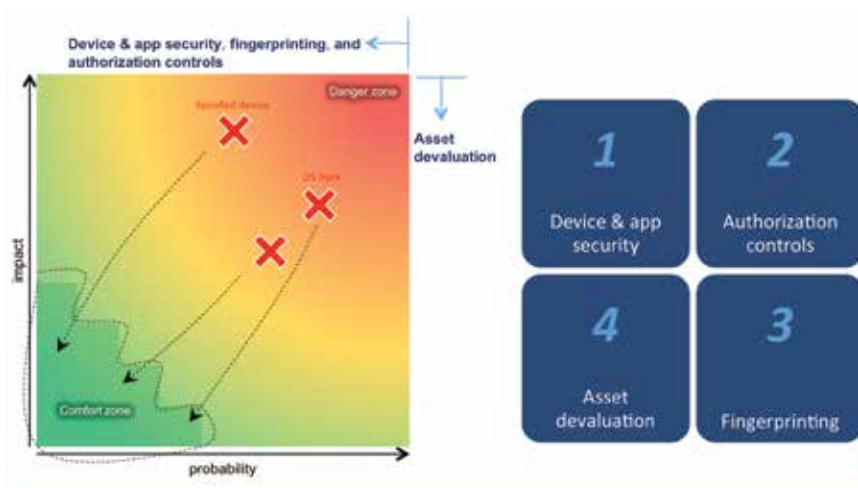
However, HCE does have its limitations. There is no hardware-secured storage of data and credentials on the mobile device and implementation is dependent on operating system capability. Alternate security approaches are also needed for HCE that can increase backend complexity.

determined by which risk mitigation measures are implemented.

HCE USE CASES

The webinar reviewed several HCE use cases: payments; access and identity; and value-added services. Each use case was described, with details of how credentials are provisioned and used. The most prominent use case for HCE to date is for mobile payment, with pilots and commercial launches globally and global payment network specifications available for HCE-based mobile payment implementation. While HCE provided advantages for each use case, challenges included the need to upgrade the existing contactless infrastructure to support NFC, the lack of industry-wide standards for some use cases, and the complexity of implementation for the issuer.

Security Measures to Mitigate HCE-Related Risks



The Mobile and NFC Council produced an educational webinar on HCE describing its evolution, security considerations, use cases and challenges.

IMPLICATIONS OF HCE

HCE was introduced for the Android 4.4 mobile operating system platform in 2013, with major payment networks developing and publishing cloud-based payment specifications that accommodate HCE throughout 2014. While there are different models for implementing HCE, the payment model is focused on using an applet in the mobile phone operating system with user data stored in the cloud. Payment cre-

HCE SECURITY CONSIDERATIONS

The webinar described different approaches to mitigate HCE-related security risks. Which approach to take would depend on the value of the asset and probability of attack. Security approaches discussed included: increasing device and app security through code obfuscation, whitebox cryptography and/or use of a TEE; authorization controls that detect and react to suspicious behavior; device fingerprinting; and asset devaluation (such as tokenization for high value credentials). The security of an HCE implementation is, to a large degree,

CONCLUSION

The webinar concluded that HCE is a promising development to increase NFC adoption as it opens up NFC capabilities to a wider range of applications. Critical to implementation is an assessment of the application security risk and implementation of the right compensating controls and risk management strategy. The Mobile and NFC Council plans to continue to monitor the developments and new use cases for HCE and provide additional educational resources on this topic.

ABOUT THE WEBINAR

The Mobile and NFC Council produced the HCE webinar to provide an educational resource for the industry. Webinar presenters included: Randy Vanderhoof, Smart Card Alliance; Sadiq Mohammed, MasterCard; Peter Helderman, UL; and Sridher Swaminathan, First Data.

Smart Card Alliance members who contributed to the webinar included: Capgemini Financial Services; CH2M HILL; Consult Hyperion; CPI Card Group; Cubic Transportation Systems; Discover Financial Services; First Data; HID Global; Kona I; MasterCard; UL.

PAYMENTS COUNCIL



PAYMENTS COUNCIL MISSION

Facilitate the adoption of chip-enabled payments and payment applications in the U.S. through education programs for consumers, merchants, issuers, acquirers/processors, government regulators, mobile telecommunications providers and payments service providers.

OFFICERS

- Co-Chairs: Jack Jania, Gemalto & Oliver Manahan, MasterCard
- Vice Chair: Deborah Baxley, Capgemini

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- Troy Bernard, Discover Financial Services
- Deana Cook, Chase Paymentech
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- Sridher Swaminathan, First Data
- Jamie Topolski, Fiserv
- Erik Vlugt, Verifone

ACTIVITIES

- 2015 Payments Summit workshop, [Payments Technologies and Innovations Workshop: Payment Strategy Considerations for Issuers, Retailers and Transit Agencies](#), collaboration with Mobile & NFC and Transportation Councils (February 2015)
- [The True Cost of Data Breaches](#) white paper (March 2015)
- 2015 Member Meeting sessions: EMV: Migration Status and a Look at the Future; Multi-Layered Security for Payments: EMV, Encryption and Tokenization (October 2015)
- EMV and NFC white paper, in collaboration with the Mobile & NFC Council
- Relationships with EMV Migration Forum

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YEAR IN REVIEW: PAYMENTS COUNCIL CO-CHAIRS

Focus Continues on EMV, Security and Contactless Payments

In 2015, the U.S. payments ecosystem has focused chiefly on one of the biggest changes in industry history: the shift to and deployment of EMV. Partly due to the Payments Council's educational initiatives in previous years, all major financial institutions have deployment plans well underway. Both sides of the industry – issuance and acceptance – were focused on achieving the October target date (when the liability shift took place). But despite the vast adoption, security continues to be a concern, with fraud and the risk of data breaches lurking in the back of everyone's minds. In response, the Payments Council aligned activities to address both the opportunities and challenges in the industry, educate on new trends, and motivate stakeholders to continue to innovate.

With EMV as the unquestionable priority in 2015, the Council's efforts continued with a slight change of focus. Now that widespread deployment is officially underway, our messaging shifted from the "Why?" of EMV to the "How?" Two white papers published this year detailed key considerations for deployment and provided guidance in specific use cases: "[EMV 101 for the Healthcare Industry](#)" and "[EMV and Parking](#)." Enabling critical and innovative thinking in regards to payment technology will help to drive current and future security solutions.

As we pass the fraud liability shift date, the Payments Council is also providing education on the other solutions EMV can now partner with and take advantage of within the industry. The opportunities for EMV and NFC as companion technologies to deliver fast, convenient and secure payment from both contactless EMV chip cards and Near Field Communication (NFC)-enabled mobile devices will be detailed in an upcoming whitepaper, with emphasis on clarifying the true role of NFC in the realm of payments.

While concentrating on the success of EMV and the subsequent advancements, the Payments Council is also taking the time to enlighten our stakeholders on the consequences that result from a breach in security. The whitepaper "[The True Cost of Data Breaches in the Payments Industry](#)" was published in March 2015, providing a resource for stakeholders to truly understand the tangible and intangible costs a data breach may mean for their organization. Through education on the impact of a breach, stakeholders are

now equipped with the knowledge and the motivation to prevent, detect and reduce the cost if a breach occurs.

Beyond our published material, Council members contributed to strong educational sessions at the 2015 Smart Card Alliance Pay-

Beyond our published material, Council members contributed to strong educational sessions at the 2015 Smart Card Alliance Payments Summit and the Smart Card Alliance Member Meeting. And as always, we continue to explore other educational avenues.

ments Summit and the Smart Card Alliance Member Meeting. And as always, we continue to explore other educational avenues.

In 2016, the Payments Council will realign our attentions to remain the industry's leading educator and resource as we focus on the next big step: contactless payments. Our goal will be to inform stakeholders on the

value proposition of contactless payments – both mobile and card-based – with the goal of intercepting the next card reissuance cycle.

We look forward to working together alongside our fellow Councils and the EMV Migration Forum to guide the industry and ensure successful movement toward a more secure and convenient world of payment.

It is an honor to serve as Co-Chairs of the Payments Council, and we extend our gratitude to all of our Council participants for their valuable contributions.

Jack Jania

Senior Vice President
of Strategic Partnerships
Gemalto



Oliver Manahan

Vice President of Emerging Payments
MasterCard Worldwide



EMV and NFC



EMV is a global standard for making secure debit or credit payments using chip cards. Currently, merchants, issuers, and processors in the United States are upgrading their infrastructures to accept EMV chip cards, driven by the need to reduce payment card fraud. At the same time, Near Field Communication (NFC) technology is emerging as a useful feature that enables consumer transactions using mobile devices, driven by the ability of such devices to support value-added services beyond payment.

EMV and NFC are companion technologies. EMV applies to payments made with contact and contactless chip cards or with a mobile device emulating a contactless chip card; NFC governs how mobile devices communicate. An NFC-compliant mobile device can communicate with current point-of-sale (POS) systems that accept contactless payment cards. Contactless payment transactions using mobile NFC devices use the same payment infrastructure as contact and contactless EMV chip card transactions.

This white paper clarifies how EMV payment technology and NFC communications technology work together.

EMV

EMV-compliant chip card payments protect against the use of counterfeit, lost, or stolen cards and against skimming. The U.S. is moving quickly to EMV chip technology, with many of the 10,000-plus financial institutions in the U.S. either issuing chip cards or having active issuance projects underway. The white paper includes recent projections for the number of EMV chip cards and acceptance locations or devices that will be in the market.

NFC

NFC is a set of standards that enable proximity-based communication between consumer electronic devices, such as mobile phones, tablets, and personal computers. When provisioned with the appropriate applications and credentials, a mobile NFC device can not only pay conveniently, it can also deliver promotions, offers,

and/or loyalty programs to the consumer. These services can provide significant value and can be the business driver for contactless acceptance.

EMV AND NFC

Understanding how payments using EMV chip technology and a mobile NFC device work requires an understanding of the underlying processes. The white paper describes options for provisioning cards and using them at a POS, provisioning payment credentials to mobile NFC devices, and using NFC devices for contactless payment.

Additional implementation considerations for merchants include migration considerations to move to contactless EMV POS terminals, the types of transactions and cardholder verification methods that are acceptable, customer experience considerations, and attendant costs. The effects of mobile device availability and other usability factors are also explored.

ABOUT THE WHITE PAPER

This white paper was developed by the Smart Card Alliance Mobile and NFC Council and Payments Council to explain that EMV and NFC are companion technologies and clarify how they work together to enable secure payments.

Smart Card Alliance members who contributed to the white paper included: ABnote; Advanced Card Systems; American Express; Booz Allen Hamilton; Capgemini; CH2M HILL; Consult Hyperion; CPI Card Group; Cubic; Discover Financial Services; Expionet, Inc.; First Data Corporation; FIS; Fiserv; Gemalto; Giesecke & Devrient; Heartland Payment Systems; HP Enterprise Services; Infineon Technologies; Ingenico; IQ Devices; JPMorgan Chase; MasterCard; Metropolitan Transportation Authority (MTA); Mozido CorFire; NBS Technologies; NXP Semiconductors; OATH; Oberthur Technologies; Quadagno & Associates; SHAZAM; ST-Microelectronics; Thales e-Security; TSYS; Valid USA; Vantiv; Verifone; Visa Inc.; Wells Fargo; and Xerox.

The True Cost of Data Breaches in the Payments Industry

Data breaches are a growing problem world-wide. Recent statistics on the incidence of data breaches and the associated costs show that both have been increasing at a startling rate. Stakeholders in every industry sector are affected, and the average cost paid by a breached organization reached \$5.9 million by the end of 2014.

The Smart Card Alliance developed this white paper to focus on identifying the costs that are incurred in the event of a data breach by each of the payments industry stakeholders— issuers, merchants, acquirers, processors, and their cardholder customers. The white paper provides a resource that can be used to calculate the ultimate cost of a data breach.

Analyzing and understanding the potential costs of a data breach enables issuers, merchants, acquirers, and processors to create a business case for developing proactive data breach prevention strategies and create breach response plans. Organizations can better understand the substantial tangible and intangible costs associated with data breaches and why investing in strong preventive technologies is important.

To understand the financial impact of a data breach requires understanding the ecosystem. The white paper therefore identifies stakeholders, defines terms, and describes the different costs that result from a data breach. It then itemizes the costs incurred by each stakeholder as a result of a breach to determine the ultimate impact.

The white paper covers the following key topics:

- Definition of a data breach
- Recent data breach statistics and reported costs
- Definition of both tangible and intangible costs that contribute to the total cost of a data breach
- Identification of the impact of different costs on each stakeholder group

DEFINITION

The ISO/IEC Standard 27040 defines a data breach as a “compromise of security that leads to the accidental or unlawful destruction, loss, alteration, unauthorized disclosure of, or access to protected data that is transmitted, stored, or otherwise processed.” Data breaches result in the intentional or unintentional loss of secure or personal information and can involve any kind of data: financial information, individual identity information—even data that is considered to be intellectual property.

Data breaches typically result when an individual or group of individuals access a logical or physical infrastructure, including hard drives or database information that may be stored unencrypted. Bank card data breaches typically result from skimming, malware,

phishing, key logging, use of a listening device, employee negligence, or system failure.

STATISTICS AND COSTS

Various statistics quantify the cost of data breaches. The variance in the numbers underscores the need for a standardized approach to calculating the true cost of such breaches.

The first step in calculating true cost is to understand the variety of costs that must be considered and define what should be included in each cost. The white paper defines and, where possible, quantifies both the tangible and intangible costs that can be incurred. Potential costs include card reissuance, chargebacks, credit monitoring, fraud analysis, legal fees, liability costs, loss of “top of wallet” status, lost revenue, penalties, and security upgrades, among others. An easy-to-read table list and defines all potential costs.

IMPACT ON STAKEHOLDERS

The second step in determining the cost of a data breach is to identify which costs are relevant. Identifying relevant costs requires assigning an affected organization to the correct stakeholder group. Stakeholders are categorized as acquirers, merchants, issuers, cardholders, payment brands, and “others.” A matrix identifies which of the particular costs defined in the first step of the analysis has any impact on each particular stakeholder group. The matrix can be used to determine precisely which costs should be considered to calculate the true cost of a breach. Because every breach has a unique impact and costs, references are included to additional outside resources that can assist in calculating the actual financial impact of a specific breach.

The impact of a data breach ripples through all levels of an organization. A preventative approach, such as layering EMV chip technology, tokenization, and encryption, is an effective way to prevent payments industry breaches and reduce costs if a breach does occur.

ABOUT THE WHITE PAPER

This [white paper](#) was developed by the Smart Card Alliance Payments Council to provide an educational resource on the costs that can potentially be incurred as a result of a data breach. The white paper consolidates industry information on categories of costs and offers an analytic approach to calculating costs.

Smart Card Alliance members who contributed to the white paper include ABnote, American Express, Capgemini, CH2M HILL, Chase, CPI Card Group, First Data, Fiserv, Giesecke & Devrient, Heartland Payment Systems, Infineon Technologies, Ingenico, INSIDE Secure, Intelcav, JCB, NXP Semiconductors, OATH, Oberthur Technologies, OTI America, Tyfone, Verifone, VISA Inc., and Wells Fargo.

TRANSPORTATION COUNCIL



TRANSPORTATION COUNCIL MISSION

Promote the adoption of interoperable contactless smart card payment systems for transit and other transportation services and accelerate the deployment of standards-based smart card payment programs within the transportation industry.

OFFICERS

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- Vice Chair – Transit: Katina Vaughan, DART
- Vice Chair – Tolling: Mike Nash, Xerox

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- Craig Roberts, InComm
- Mike Simanek, Accenture
- Brian Stein, CH2M HILL
- Tim Weisenberger, U.S. Department of Transportation/Volpe Center

ACTIVITIES

- 2015 Payments Summit workshop, [Payments Technologies and Innovations Workshop: Payment Strategy Considerations for Issuers, Retailers and Transit Agencies](#), collaboration with the Mobile & NFC and Payments Councils (February 2015)
- *Multimodal Payments Convergence Workshop*, Washington, DC (January 2015)
- Panel at the APTA Revenue Management and Fare Collection Summit (March 2015)
- Two-day in-person Council workshop and meeting at Government Conference (June 2015)
- [EMV and Parking](#) white paper, in collaboration with the International Parking Institute (IPI) (June 2015)
- 2015 Member Meeting Session: *EMV for Transit, Parking and Tolling* (October 2015)
- Projects in process: *Reference Enterprise Architecture for Transit Open Payment System* white paper; *Multimodal Payment Convergence* white paper; *EMV and Transit* white paper

TRANSPORTATION COUNCIL MEMBERS

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YEAR IN REVIEW: TRANSPORTATION COUNCIL CHAIR

Transit Industry Benefits from Growth of Mobile Technologies

If I had to choose three areas that shaped the transportation market in 2015, they would include:

- EMV liability shift date
- Growing development and use of mobile technologies
- Payment platform decisions

Payment platforms represent a critical decision point in the process of replacing or modernizing fare payment systems. In 2015, the William Volpe Center completed a study on transit fare payment technology and provided insight on the direction of the market. You can read the complete study here: http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_177.pdf.

While the majority of the larger U.S. agencies operate closed payment systems, there is a growing movement toward open payments; several agencies are planning to deploy systems that accept bank-issued debit, credit, and prepaid cards. These agencies now join the ranks of two early adopters of open payments: the Utah Transit Authority and the Chicago Transit Authority, both of which offer a prepaid card to riders. The Volpe analysis underscores emerging technology trends affecting the smart card market and notes characteristics of next generation fare payment:

- Availability and security of contactless bank cards, which increase the potential ridership base for public transit agencies
- Availability of prepaid and reloadable payment cards, which offer options for unbanked transit customers
- Advances in mobile payments and mobile technology, which can be incorporated into next generation transit fare payment systems
- Acceptance of smart ID credentials on transit, which can improve customer convenience through integration with transit benefit programs
- Convergence of mobile payments, travel and planning across multiple modes of transportation.

The industry also remains focused on the priorities of EMV compliance and Near Field Communication (NFC) technologies. While the liability shift has passed, the possibility of losses due to fraud increases for agencies that neglect to upgrade their payment acceptance infrastructure to the EMV standard. Last year, the EMV Migration Forum announced an exponential growth in the number of EMV chip cards to an estimate of 100 million cards. Transportation agencies face similar choices as other merchants

on issues that include card interface technology, card verification method (CVM) and methods for card authentication and authorization.

The growth of mobile technologies offers the transit industry a robust form factor for fare payment in combination with a host of rider friendly applications, including trip planning, navigation, system status and schedule information. Smart phone manufacturers commonly issue products with NFC technology. Also noteworthy is the growth in the use of smart phones for mobile ticketing. The user purchases a ticket online and downloads a bar code to a mobile device for validation by either visual or electronic means. Although the primary application is for rail modes, there are pilot tests ongoing for bus as well.

Finally, I must mention the disruptive forces shaping mobility on many levels, especially in the automobile industry and by extension, public transit. Rapid advances are taking place such as in the “connected car” innovations that integrate communication technologies and the Internet of Things (IoT) to provide valuable services to drivers. Google’s driverless cars have already driven more than one million miles in autonomous mode. Equally disruptive are the car sharing and ride sharing services – a movement that started with Zip Car and that recently spawned the ridesharing concepts of Uber and Lyft. Uber alone delivers one million riders globally on a daily basis. Likewise, buses and trains now contain sensors providing machine to machine communication that provide real time data on acceleration, braking, and global positioning. Increasingly, passengers can instantly access data on system status, pay fares and even view rewards by a button click. All this adds up to a greatly improved customer experience.

I am honored to have led the Transportation Council through a busy year of activities and movement. Thank you to everyone who contributed to our successes.

Gerald Kane
Senior Project Planner
New Payment Technologies
SEPTA



EMV and Parking

As the U.S. moves to EMV chip technology for credit and debit card payments, migration to chip cards to pay for parking will require input from every parking payment ecosystem stakeholder—parking operators, acquirers, systems integrators, parking access revenue control system (PARCS) providers, and parking consultants. The Smart Card Alliance and the International Parking Institute published the white paper, [EMV and Parking](#), to help the parking industry transition to chipcard payments.

Because EMV migration requires payment infrastructure changes, stakeholders should review their current infrastructure and develop an EMV migration strategy that will enable them to avoid the fraud liability shifts that take effect in 2015. This white paper approaches migration requirements from the perspective of both Alliance members, many of whom are experts in payments, and IPI members, who specialize in parking. The white paper provides education and guidance that will enable parking stakeholders to migrate to EMV successfully.

The white paper covers the critical aspects of deploying EMV-compliant solutions, focusing on the needs of parking merchants and suppliers as well as integrators of parking equipment, software, and support services. A short history of EMV explains why the move to EMV is considered necessary, how the move will affect parking stakeholders, and what the implementation deadlines are. It explains the EMV-compliant transaction process and demonstrates how such a transaction differs from a current magnetic stripe card transaction. The white paper also describes different methods for authenticating cards and verifying cardholder identity.

Since EMV migration can be a lengthy and complex process, parking equipment manufacturers, integrators, and operators are encouraged to perform an EMV migration impact analysis to define the migration process scope. The white paper highlights key considerations, including choice of appropriate terminals, EMV impact on transaction messaging, EMV certification requirements, options for additional payment and security functionality, and potential impact on the cardholder experience.

The parking industry processes card payments for a variety of products and services. A significant number of these transactions are card-not-present transactions, including parking credential or

parking pass payments, citation payments, deposits, and towing fees paid online. However, many transactions are still card-present transactions, in which the patron must present a payment card to a cashier (at attended locations) or device (at unattended locations). The white paper enumerates key considerations for those parking

industry stakeholders who want to accept and process chip transactions at both types of locations. Migration can affect transaction speeds, operational requirements, and costs when payment is made using in-lane cashiers, pay on foot devices, and pay in lane devices. In addition, migration involves implementing additional software interfaces and can necessitate additional staff and customer training.

The POS acceptance infrastructure is changing with the migration to EMV. Parking operators should consider any changes required on their part to support EMV transactions as an opportunity to provide support for contactless transactions with cards or NFC-enabled mobile devices as well. The white paper describes the relationship between U.S. contactless bank card transactions and NFC-enabled mobile payments, and suggests that by combining the EMV migration with NFC support, operators may experience a

better return on investment and be properly positioned to accommodate future payment mechanisms.

ABOUT THE WHITE PAPER

The Smart Card Alliance Transportation Council developed this white paper in partnership with the International Parking Institute to provide parking industry stakeholders with an educational resource covering the critical aspects of deploying an EMV solution within the parking infrastructure.

Smart Card Alliance and IPI members who contributed to the white paper include Aberdeen Management Group; Accenture; CH2M HILL; Creditcall; Giesecke & Devrient; HUB Parking Technology; Ingenico; LTK Engineering Services; Lumin Advisors; MasterCard; Metropolitan Transportation Authority (MTA); OTI America; Parkmobile; Sentry Control Systems; Southeastern Pennsylvania Transportation Authority (SEPTA); SMARTRAC Technology Group; SP Plus Corporation; T2 Systems; Texas A&M, Verifone; and Visa Inc.



Multimodal Payments Convergence Workshop

In January 2015, the Transportation Council held a workshop in Washington, DC, to explore the potential for payment services for transit, toll roads, parking, and other modes of transportation to converge. Participants included representatives from industry, local government, and the Federal government.

The workshop had several objectives:

- Explore potential interests and opportunities for convergence
- Identify challenges and potential barriers to convergence
- Propose actions that could define and facilitate convergence and identify who should be involved in these activities

CONVERGENCE DEFINED

The workshop defined the term “payments convergence” to include the following:

- Use of common or interoperable payment media
- Availability of multimodal or linked payment accounts
- Payment linked with traveler information and trip planning
- Multimodal or multi-industry promotions, offers, or incentives
- Integrated customer services (e.g., call centers)
- Shared payments data
- Multimodal transportation and mobility strategies

Several factors have contributed to the increased potential for convergence: expanding transportation choices (particularly growth in bike, car, and ride share services), growing interest for multimodal approaches to mobility, the proliferation of mobile technology and applications, the growth of account-based approaches to transit payment, requirements to manage regional travel demand, and budget challenges and pressures to reduce costs.

Representatives of transportation industry associations described the convergence related activities that each association is undertaking. Highlighted during these descriptions were the influence of technology on methods of payment, an increased emphasis on customer service, and the concept of “mobility on demand,” meaning that a variety of alternatives for and information about transportation are made available to customers.

INTERESTS AND OPPORTUNITIES

Workshop participants identified situations that present an opportunity for multimodal payments convergence, including current customer desire for seamless travel and multimodal travel options and regional mobility strategies, which can involve both public and private providers. Participants also noted that convergence efforts can build on the account-based systems currently being implemented in transit and leverage financial industry and smart card technology standards. Education and cooperation between public and private sector participants were also cited as important contributing factors, as was the potential for the federal government to

sponsor and fund demonstrations of concepts, which could catalyze convergence programs.

CHALLENGES

Participants also identified issues involved in multimodal payments, including the absence of information on consumer attitudes, differences in governance and funding, and an absence of standards applicable to system architecture, data access, and data management. Tax rules and security and privacy also represent major challenges.

While the consensus was that it may be impossible to predict how multimodal payments will develop in different regions, workshop participants felt that progress could be facilitated by defining potential migration paths and identifying general steps toward achieving the common goal.

RECOMMENDED ACTIONS

Workshop participants developed a set of recommended actions to further define and facilitate payments convergence. At the top of the list is building awareness of potential opportunities and engaging the public and private sector in the discussion. Other actions include reaching out to appropriate industry associations, developing descriptions of potential opportunities, and funding demonstrations of convergence. In addition, the group recommended that industry associations and the U.S. Department of Transportation support the development of reference architectures and standards and participate in international standards efforts, such as those led by the International Standards Organization. Finally, interested parties in both the private sector (such as application developers) and public transportation providers should be encouraged to include convergence in the planning and implementation of new products or programs.

ABOUT THE WORKSHOP

This workshop was hosted by the Smart Card Alliance Transportation Council.

Participants involved in the workshop included representatives from Accenture, the American Association of State Highway and Transportation Officials, the Association for Commuter Transportation, Cubic Transportation Systems, InComm, the International Bridge, Tunnel and Turnpike Association, the International Parking Institute, ITS America, LTK Engineering Services, MasterCard, NXP Semiconductors, Ride Scout, the Smart Card Alliance, and Xerox. Transit agency participants included the Utah Transit Authority, the Metropolitan Transportation Commission, and the Southeastern Pennsylvania Transportation Authority. Federal government participants represented the Federal Transit Administration, the U.S. Department of Transportation TranServe, the U.S. Department of Transportation/Volpe Center, and the U.S. Department of the Treasury.

EMV MIGRATION FORUM



EMV Migration Forum Overview

The Smart Card Alliance formally announced the creation of the EMV Migration Forum (the Forum) on July 31, 2012, to address issues that require broad cooperation and coordination across many constituents in the payments space in order to successfully introduce secure EMV contact and contactless technology in the United States.

Membership in the Forum includes nearly 175 global payments brands, financial institutions, merchants, processors, acquirers, regional debit networks, industry associations and industry suppliers. While part of the Smart Card Alliance corporate organization, the EMV Migration Forum has a separate membership and includes organizations with no previous involvement with or usage of smart cards or chip technology other than how this technology integrates into the EMV payments infrastructure.

The Forum is a neutral, cross-industry group. The Forum provides member companies with a supportive and congenial venue in which all payments stakeholders interact and work on projects to facilitate a successful transition from magnetic stripe technology to secure EMV contact and contactless technology in the United States.

With its goal to address topics that require some level of industry cooperation and/or coordination in order to achieve an efficient, coordinated, and timely migration to EMV, the Forum is successful due to its members and their collaborative work mindset.

EMV Migration Forum Officers & Steering Committee

OFFICERS (2014-2015)

- John Drechny, Walmart (Chair)
- Patty Walters, Vantiv (Vice Chair)
- Karen Czack, American Express (Secretary)
- Sarah Hartman, TSYS (Treasurer)

STEERING COMMITTEE MEMBERS (2014-2015)

- Carolyn Balfany, MasterCard
- Deana Cook, Chase
- Kristy Cook, Target
- Karen Czack, American Express
- John Drechny, Walmart
- Allen Friedman, Ingenico
- Barry Hanen, Walgreens
- Scott Haney, Woodforest
- Kathy Hanna, Kroger
- Art Harper, PSCU
- Sarah Hartman, TSYS
- Simon Hurry, Visa Inc.
- Jesse Lee, Wells Fargo
- Jesse Pamperin, McDonald's
- Nick Pisarev, Giesecke & Devrient
- Ron Schnittman, Bank of America
- Ellie Smith, Discover Financial Services
- Christine Strock, First Data
- Jamie Topolski, Fiserv
- Erik Vlugt, Verifone
- Huy Vu, Unionpay
- Patty Walters, Vantiv
- Bob Woodbury, FIS/NYCE

A MESSAGE FROM RANDY VANDERHOOF

Moving Day for EMV

The EMV Migration Forum emerged as a major force of change in the payments market in 2015. The calendar became an important motivator to all the EMV stakeholders as 2015 arrived, because we began counting in months rather than years the time remaining before the October 2015 fraud liability shift date. With many of the difficult issues and choices resolved for how to deal with some of the uncertainty surrounding the issuance and processing of Durbin-compliant chip debit cards, the path toward meeting the October milestone became more apparent and the months rolled on.

There is a saying in professional golf that the third day of four-day tournaments is called “moving day.” The reference applies to the top golfers in the tournament who break away from the pack on the third day, putting themselves in position to win the tournament on the final day. I think 2015 was moving day for EMV. In the 2+ years leading up to that point, many organizations were competing to be heard and shape the way EMV was to be implemented. While the Forum offered an opportunity for all views to be shared and discussed, the voices of a few leaders rose above the others and significant movement on important issues began to happen. With that behind us, significant volumes of EMV chip cards, terminals, and testing services happened as well.

The movement in 2015 also applied to a change in focus by the Forum working committees and our hard-working steering committee. As cards started to fill consumer wallets and terminals were enabled at first-moving retailers like Walmart and Target (as well as a myriad of small merchants), a pressing need emerged for more education about chip cards to describe how they look and work differently for consumers and small merchants. To fill that need and void, we developed and launched www.GoChipCard.Com, using messages and graphics honed by the Forum working committees and skillfully designed into a website that has had over 38,000 pages views in only a few months.

The CHIP IN campaign was another Forum initiative that combined proven EMV educational content and a strong outreach program and succeeded in pushing EMV materials into the

hands of marketing professionals. A social media campaign was combined with the initiative to extend its reach to the market and consumers. In addition, thousands of downloads of white papers, webinar recordings, resources in the Knowledge Center, and broadcast quality video helped move the industry to achieving millions of transactions with chip cards at over 400,000 merchant locations by the October liability shift date. These early days of the U.S. transition to EMV and tokenized mobile payments have proven that the cards, readers, and processing networks are working as they were designed. It has been a huge lift to get us to this point, which many are calling just the starting point for our EMV transition.

The EMV Migration Forum's work to align all industry participants, develop the structured working communities, and deliver the necessary groundbreaking education work was what facilitated the 'moving day' moment that the EMV migration needed to separate from those who doubted it would happen.

The EMV Migration Forum's work to align all industry participants, develop the structured working communities needed to get past the obstacles, and deliver the necessary groundbreaking education work was what facilitated the “moving day” moment that separated those early adopters from the pack of those who doubted it was possible. The Forum has been instrumental in putting the U.S. market in a better position to win the battle against fraud and set the market on the path for global interoperability and future payments innovation.

Thank you to all of our 175 member organizations for your commitment and leadership during this journey.

Randy Vanderhoof
Director
EMV Migration Forum



EMV Migration Forum Membership: 176 Members

- ABnote North America
- Acculynk
- ACI Worldwide
- Acquirer Systems
- Alaric NCR
- Alliance Data
- American Express
- Apriva
- Argotecthno
- Arroweye Solutions, Inc.
- Ascertain, LLC
- ATM Industry Association
- ATMequipment.com
- Attra Infotech Private Limited
- B2 Payment Solutions Inc.
- Bank of America
- Bank of the West
- BankUnited
- Barclaycard US
- Barnes International Limited
- Bell ID
- Bernd Blume
- BMO Harris Bank N.A.
- BP Products NA
- Branch Banking & Trust Company (BB&T)
- BridgePay Network Solution, LLC
- Burroughs, Inc.
- Capital One
- Card Services for Credit Unions (CSCU)
- CardConnect
- Cardtek USA
- Cardtronics USA
- Catalyst Card Company
- Cayan
- CETECOM INC.
- Chevron
- CHS Inc.
- CITGO Petroleum Corporation
- Citibank
- Citizens Bank, NA
- City National Bank
- Clear2Pay
- Cognizant Technology Solutions
- Columbus Data Services
- Computer Services, Inc
- Conexus, Inc.
- Consult Hyperion (Hyperion Systems Ltd)
- CPI Card Group
- Credit Union 24 Network
- CreditCall Corporation
- Cryptomathic Inc
- Cubic Transportation Systems, Inc.
- Cummins Allison Corp.
- Debit Network Alliance
- Diebold Incorporated
- Discover Financial Services
- E Chip LLC
- E&S Consulting LLC
- EchoSat Communications Group
- EFT Source, Inc.
- Elan Financial Services
- Elavon, Inc.
- Electronic Trade Solutions Ltd
- Electronic Transaction Association
- Entrust Datacard
- Equinox Payments
- Euro Tech Sales LLC
- Federal Reserve Bank of Minneapolis
- Fifth Third Bank
- FIME
- First Data
- First National Bank of Omaha
- FIS
- Fiserv
- Galitt US
- GE Capital Retail Bank
- Gemalto
- Giesecke & Devrient
- Gilbarco
- Government Payment Consulting Services, LLC
- Harland Clarke
- Heartland Payment Systems
- HP Atalla Data Security
- ICC Solutions Limited
- ICTK Co., Ltd.
- ID TECH, INC
- Infineon Technologies
- InfoGard Laboratories
- Ingenico Inc.
- INSIDE Secure
- Intelligent Parking Concepts LLC
- Interac Association
- iPayment Inc.
- Jack Henry Processing Solutions
- JCB International Credit Card Company
- JPMorgan Chase
- KONA I co. Ltd
- L Brands
- Lans Holdings Inc.
- Lowe's
- Macy's Credit and Customer Services
- Magellan Consulting Inc
- MagTek Inc.
- MasterCard Worldwide
- McDonald's
- Merchant e-Solutions
- Merchant Link, LLC
- Morpho Cards USA, Inc.
- MTA New York City Transit
- Multos International Pte. LTD
- Navy Federal Credit Union
- NCR Corp
- NXP Semiconductors
- Nxt-ID, Inc
- Oberthur Technologies
- Paragon Application Systems
- PCI Security Standards Council, LLC
- Perfect Plastic Printing
- Phillips 66 Company
- PNC Bank
- Proxama
- PSCU
- Publix Super Markets Inc
- Q-Card Company/Brush Industries
- Regions Bank
- Safeway Inc
- Santander Bank, N.A.
- Savage Consulting Group
- SCIL EMV Academy, Inc.
- Sears Holdings Corporation
- ServiRed S.A.
- SHAZAM
- Shubert Ticketing
- Smartrac Technology Group
- SPS
- State Farm Bank
- Sterling Payment Technologies
- STMicroelectronics
- SunTrust
- SWACHA - The Electronic Payments Resource
- Target Corporation
- TAS Group
- TD Bank NA
- Tesoro Refining and Marketing Company, LLC
- Thales E-Security Inc.
- The Home Depot
- The Kroger Co.
- The Members Group
- The National ATM Council, Inc.
- The Walt Disney Co.
- Toshiba Corporation
- TransSEND IT, Inc.
- TransFirst LLC
- Tritan Systems of Delaware, LLC
- TSYS
- UBIVELUX Inc
- UBS Bank USA
- Underwriters Laboratories (UL)
- Union Bank, N.A.
- UnionPay USA
- USAA Federal Savings Bank
- Valid USA
- Vantiv
- VeriFone, Inc.
- Visa Inc.
- W. Capra Consulting Group
- Wakefern Food Corp
- Walgreen Co.
- Walmart
- Wayne Fueling Systems
- Wells Fargo
- WEX Inc.
- Whole Foods Market, Inc.
- Woodforest National Bank
- WorldPay US
- Xerox

As of September 30, 2015

EMV Migration Forum Working Committees

The EMV Migration Forum has seven working committees and two special interest groups focused on different topics relevant to EMV Migration. The working committee topics and activities are chosen by EMV Forum members based on critical issues discussed in the Forum meetings. Forum members can join any working committee and lead or participate in committee projects. Projects are defined by the committee members to focus on the critical issues or challenges that impact the U.S. payments industry migration to EMV. Working committees meet at EMV Migration Forum in-person meetings and in regular teleconferences.

ATM Working Committee. The ATM Working Committee goal is to explore the challenges of EMV migration for the U.S. ATM industry, work to identify possible solutions to challenges, and facilitate the sharing of best practices with the various industry constituents, with the goal result being more positive EMV migration experience for consumers. The Working Committee will serve to provide input, solutions, and expertise that are specific to the needs of the ATM channel to other EMV Migration Forum working committees.

- Working Committee co-chairs: Stuart Mackinnon, Columbus Data Services; Ron Schnittman, Bank of America; David Tente, ATMIA

Card-Not-Present Fraud Working Committee. The Card-Not-Present Fraud Working Committee goal is to create a comprehensive best practices strategy to mitigate card-not-present fraud in the new EMV chip card environment, using a balanced approach considering all key stakeholders – issuers, consumers, merchants, acquirers, networks and third parties. Working Committee projects include reviewing and assembling lessons learned from other country migrations, benchmarking potential tools used to address fraud, monitoring fraud levels and collaborating with other organizations to understand fraud costs, and providing best practices for online fraud management.

- Working Committee co-chairs: Teresa Bryan, MasterCard; Joseph Vasterling, Target

Communication and Education Working Committee. The Communication and Education Working Committee goal is to deliver a communications plan for key payments industry stakeholder that promotes an efficient, timely and effective migration to EMV-enabled cards, devices and terminals in the United States. Committee projects include leading the Forum's efforts on developing clear, consistent messaging around EMV migration.

- Working Committee co-chairs: Marie Doloc, Arroweye Solutions, Inc.; Diane Jackson, CPI Card Group; Mansour Karimzadeh, SCIL EMV Academy



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- EMV card/mobile profile

TECHNICAL CONSULTING

- Host certification
- End-to-end terminal certification

CERTIFICATION

- FIME test tools
- Major payment schemes for cards and terminals

Debit and EMV Working Committee. The Debit and EMV Working Committee goal is to coordinate across the payments industry to solve debit challenges with EMV migration in the United States. The Committee worked on understanding stakeholder requirements for debit and network routing and identifying potential solutions that comply with the Durbin Amendment and support merchant routing. The Committee includes a broad cross-section of the payments industry including issuers, merchants, acquirers, processors, global payment brands, regional debit networks, industry suppliers and industry associations.

- Working Committee co-chairs: Oliver Manahan, MasterCard; Emily Santos, SunTrust

Petroleum Working Committee. The Petroleum Working Committee is for all interested parties to work collaboratively to identify, review and resolve challenges associated with implementation of EMV within the U.S. petroleum and convenience market. The Petroleum Working Committee includes payment networks, petroleum and convenience merchants, petroleum-specific acquirers, petroleum and convenience POS vendors and fuel dispenser manufacturers, and other organizations servicing the petroleum and convenience category. The initial focus of the Working Committee is looking at how to streamline EMV testing and certification for the petroleum industry.

- Working Committee co-chairs: Kara Gunderson, CITGO Petroleum Corporation; Tomas Levy, Gilbarco; Terry Mahoney, W. Capra Consulting Group

Testing and Certification Working Committee. The Testing and Certification Working Committee goal is to discuss the challenges with EMV certification and define approaches for achieving certification to meet the payment brand milestones for fraud liability shift. Areas for focus include: education on the testing and certification that is required for different industry stakeholders; evaluation of current processes to define approaches for streamlining testing and certification.

- Working Committee co-chairs: Randy Burnette, Verifone; Cindy Kohler, Visa Inc.

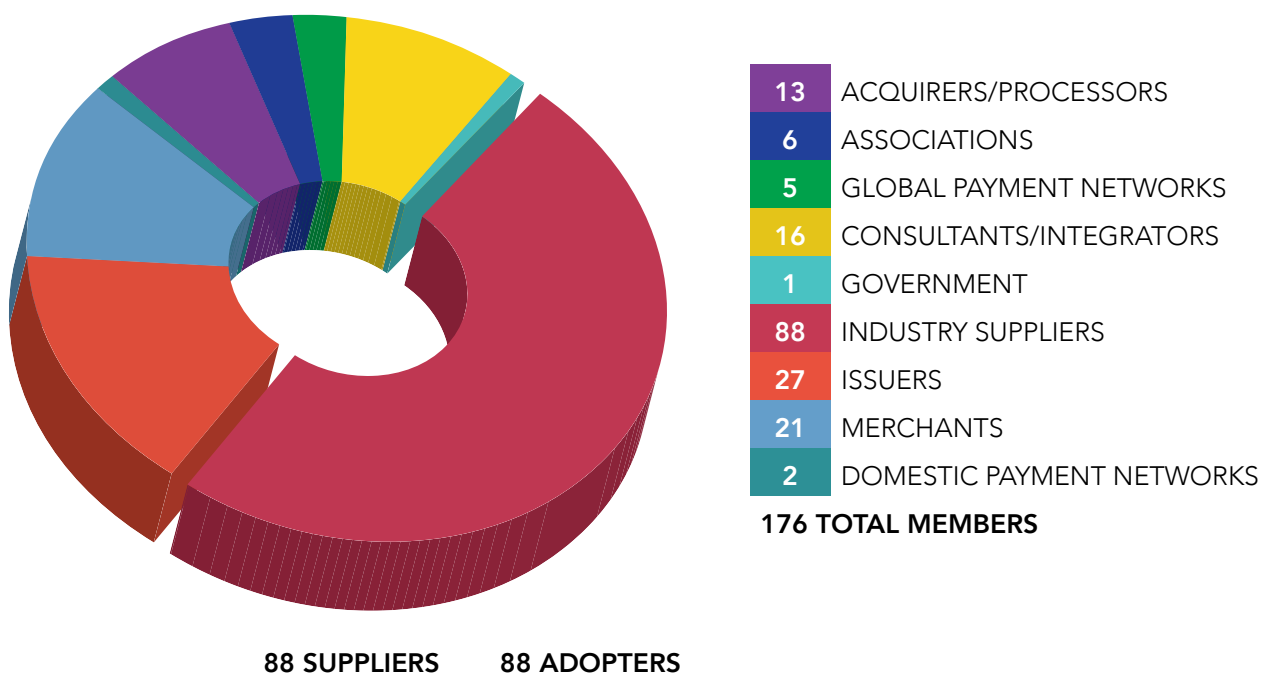
U.S. Coordination Working Committee. The EMV Deployment Coordination Working Committee goal is to identify the specific areas that need coordination for the U.S. market and to deploy projects for stakeholders to collaborate on critical issues. The Committee is exploring ways to obtain early input on best practices for EMV-related operations and consumer and merchant messaging.

- Working Committee chairs: Milind Bengeri, Discover Financial Services

Special Interest Groups

The EMV Migration Forum has two special interest groups (SIGs), one for merchants and one for issuers. The Merchant SIG is led by Kristy Cook, Target. The Issuer SIG is led by Jesse Lee, Wells Fargo.

EMV Migration Forum Membership Mix



EMV Migration Forum Resources

The EMV Migration Forum had an active year, developing business and technical resources to assist with EMV migration and launching outreach and education initiatives for issuers, merchants and consumers.

OUTREACH AND EDUCATION

- [Chip card video](#) and [broadcast quality video for media use](#), providing education for consumers on chip cards, why they're receiving them, and how to use them in stores and at ATMs
- [CHIP IN Educational Initiative](#), providing issuers, merchants, acquirers, networks and others with common educational messages and materials that can be shared through social media and other channels
- [EMV Chip Cards: The Future of payments](#) infographic, providing answers to key questions surrounding the U.S. migration to EMV chip cards for payment
- [GoChipCard.com](#), providing easy-to-use resources on chip cards for consumers, merchants and issuers

BUSINESS AND TECHNICAL RESOURCES

- [Cardholder Verification Methods: Concepts, Implementations, and Impacts](#) video presentation, providing detail on EMV Cardholder Verification Method concepts, implementation and impact on stakeholders
- [Chip Education for VARs, ISVs and Merchants](#) webcasts, providing educational webcasts for U.S. value added resellers, independent software vendors and merchants
- [Contact Chip Card Online Authentication](#) video presentation, providing a clear description of how an EMV transaction is secured using "cryptograms"
- [Implementing EMV at the ATM: PIN Change at the ATM](#) white paper, providing guidance for ATM owners and issuers who are contemplating implementing PIN change at the ATM
- [Implementing EMV at the ATM: Requirements and Recommendations for the U.S. ATM Community white paper](#) and [webinar](#), providing an educational resource for stakeholders responsible for the implementation of EMV at the ATM in the U.S.
- [Implementing EMV in the U.S.: Best Practices in Support of EMV Instant Issuance](#) white paper, providing an educational resource for issuers that documents the best practices for transitioning an existing instant issuance solution to support the issuance of EMV chip cards
- [Implementing EMV in the U.S.: How the U.S. Common Debit AIDs Facilitate Debit Transaction Routing and Ensure Durbin Compliance](#) video presentation, providing an overview of the U.S. Common Debit AIDs and how they facilitate debit transaction routing and ensure Durbin compliance
- [Knowledge Center](#) update, providing an online resource library for all stakeholders involved in U.S. EMV implementation
- [Managing Card-Based Tip and Gratuity Payments for EMV Chip](#) white paper, providing information on how to best manage tips and gratuities as the U.S. migrates to chip
- [Minimum EMV Chip Card and Terminal Requirements – U.S.](#) matrix, defining the minimum card and terminal EMV requirements for payment networks
- [Near-Term Solutions to Address the Growing Threat of Card-Not-Present Fraud white paper](#) and webinar, providing a resource on the existing best practices for authentication methods and fraud tools to secure the card-not-present channel
- [Recommended Communications Best Practices](#) guidance, providing a step-by-step resource for issuers and merchants to develop effective messaging and education approaches during the U.S. migration to chip technology
- [Understanding the 2015 U.S. Fraud Liability Shifts](#) white paper, providing information on the counterfeit and lost or stolen liability shifts to assist merchants, acquirers, processors and others implementing EMV chip technology in the U.S. with their migration
- [U.S. Debit EMV Technical Proposal](#) white paper update defining recommendations for a debit technical framework for the U.S. payments industry



LATIN AMERICA CHAPTER



SMART CARD ALLIANCE LATIN AMERICA & THE CARIBBEAN (SCALA) MISSION

Stimulate the understanding, adoption, use and widespread application of smart cards in the Americas.

SCALA Overview

SCALA, the Latin American and Caribbean chapter of the Smart Card Alliance, works to stimulate the comprehension, interoperability, convergence, evolution, and widespread innovative applications of integrated circuit cards and related technology components in the region. Through its Center of Excellence and specific projects including technical documents, education programs, market research, advocacy, industry relations and open forums, SCALA keeps its members connected to industry leaders. The chapter is proud to be a leader on the impact and value of smart card technology in Latin America and the Caribbean.



**The Digital Center
of Excellence**

The Digital Center of Excellence

The Digital Center of Excellence will be the first center dedicated to providing training on integrated circuit cards in Latin America and the Caribbean. The Center will train new and existing professionals from the region to become industry experts on the development of integrated circuit card technologies. This training is expected to help promote synergy among technology suppliers, universities, and end users. It will also allow companies to reduce the cost of training new recruits and provide opportunities for participating university students to enter the industry. The Center is supported by SCALA's affiliated companies, who have committed resources and expertise to develop educational resources, technical documents, and hands-on training for participating professionals, with a focus on improving the overall quality of smart card implementations in the region.

Upcoming Event

Digital Tour-Americas, June 7-9, 2016
Panama, Republic of Panama





SCALA Councils

THE MEANS OF PAYMENT COUNCIL

The SCALA Means of Payments Council focuses on facilitating the adoption and convergence of chip-enabled payments systems and related applications in Latin America and the Caribbean. The Council brings together industry stakeholders, payment leaders, merchants and suppliers. The Council works to reduce the barriers to adopting smart card technology in projects related to EMV, open payments, contactless payments, chip-enabled e-commerce and other payments projects. The Council's goal is to promote the value of chip-enabled payments and related components to the market to improve the security and quality of service.

The Council works on projects to provide educational resources for innovation in and convergence of smart card related implementation for financial inclusion, transportation, and payments. This Council has played a key role in the development of the Open Payment Initiative in

Transportation in the region. The focus of this project is the evolution of payments in transportation as the transportation industry moves toward a system that accepts dual-interface EMV compliant cards such as prepaid, debit and credit cards.

IDENTITY COUNCIL

SCALA's Identity Council focuses on promoting adequate policies and best practices concerning the implementation secure interoperable identity credentials and related applications within the Latin American and Caribbean regions. The Council addresses the challenges of secure identity by developing guidelines for organizations, so that they can realize the benefits that secure identity delivers. The Council's members share their experiences in a non-partisan manner with the countries' authorities in order to find solutions to the problems faced and to seek the development of collaboration among countries.

The Council has begun the development of an open specification for the reciprocal recognition of national identity documents, moving forward toward a system that allows different countries to electronically validate the identity credential information of another. The specification also contemplates the interoperability of multiple applications in a single credential.

The Council works on projects to raise awareness of the issues that organizations and the public face in implementing and using identity systems. SCALA's Identity Council provides support to different projects such as:

- Access Control
- Civil Registration
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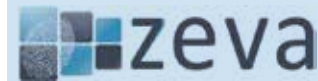


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Implementation Considerations for NFC and other Mobile Technologies: Payments and Beyond Workshop

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