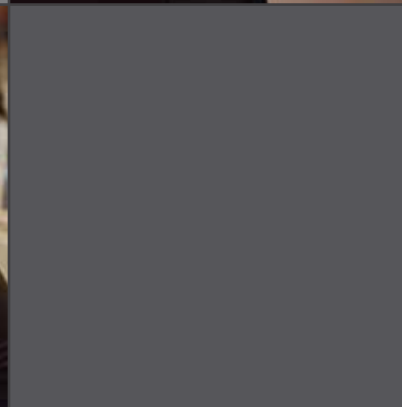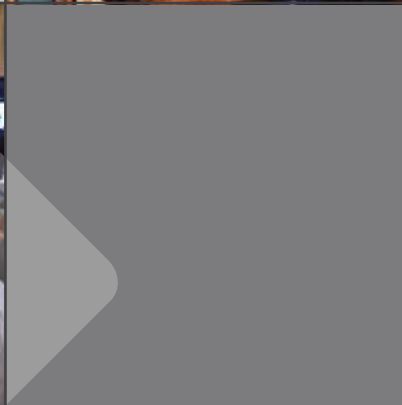# Smart Card Alliance

Annual Review 2014

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

Its Maxims are: *Flexibility and Reliability*

Flexibility

MULTI-APPLICATION	MULTI-BRAND	MULTI-INTERFACE	MULTI-PROVIDER
Credit/Debit	Domestic	Contactless)))	Various Chip Manufacturers
Transport	International	Contact	Global and Local Card Manufacturers
PKI	• Visa		Multitude of Personalization Companies
Identification	• MasterCard		...
Epurse			
...			

Strong American and European presence, being the **absolute leaders in Latin America and Spain**. *We collaborate with the* **main world class industry suppliers**.

100 % Reliability

• From the beginning in the 90s, there hasn´t been any incident whatsoever regarding, neither security nor operability.

*More than 7*00 MM Cards issued *with Advantis Technology worldwide, equivalent to* **10%** *of the mass of Chip Cards issued in the world. Over* **20 years of experience** *in payments, and leading the EMV migration in* **many countries**.

ServiRed

44 IDENTITY

46 PAYMENTS

50 TRANSPORTATION

Moving Full Steam Ahead

Each month my Executive Director's letter allows me a forum for personal observations about what I see happening across the industries our members care about. Looking back at my letters, I noticed I've used quite a few nautical themes in 2014 to describe the triumphs and setbacks for the smart card industry. While the sea and sailing don't appear to have much relevance to smart cards on the surface, their phrases are compatible to highlight the active movement within smart card technology and the ecosystem. As I sum up 2014, another nautical term, "hand over fist," best describes the activity across our industry. It means moving quickly and continuously which has definitely been evident in our payments, mobile, and access security markets.

The six Industry Councils are what keeps our membership united and our individual members engaged. We closed out 2014 with 577 individuals from 116 member organizations involved in the councils. It is through their participation and willingness to share information that we have had such a successful year. Council members have also embraced cross council collaboration at a time when convergence of technology and applications, especially around mobile, are everywhere. Through collaborating with other councils or outside groups and producing white papers, our councils offer immeasurable value.

The Smart Card Alliance organization commits itself to keep members informed, and so we have assembled a strong pipeline to communicate news and information to you. The daily news digests, monthly and quarterly newsletters, specialized newsletters for our LEAP, CSCIP and CSEIP recipients, and our website, kept updated with fresh material, are strong member benefits.

The conferences and webinars we produced in 2014 touched every vertical market and allowed our collective industry knowledge and market awareness to extend beyond the edges of the organization, while letting in fresh new insights from top industry leaders to be absorbed by our own members. The 2014 calendar year began with the Payments Summit, in Salt Lake City, at the truly Grand America Hotel. In June, we held the NFC Solutions Summit in Austin, Texas where the industry buzz around Host Card Emulation (HCE) was the catalyst for vigorous discussions with NFC specialists, mobile operators, and security experts.

Prior to our annual Government Conference in October, we held a special one day Government Celebration event in July to commemorate the 10th anniversary of HSPD-12. This event was a prelude to the 13th Annual Government Conference held in late October, which featured the federal government's expanding vision of FICAM to defend against cybersecurity attacks as well as protect its physical infrastructure.

In June 2014, our federal government called on the Smart Card Alliance to conduct a training and certification program for access control system installers and engineers to better protect our nation's federal buildings by properly installing PKI-enabled systems using strict FIPS 201 standards and using PIV cards for secure access. Within sixty days, the new training program, called CSEIP, the Smart Card Alliance Certified System Engineer ICAM PACS, held its first class and is the only training recognized and approved by the GSA. This complements the LEAP and CSCIP certification training that began six years ago.

To conclude this year-end wrap up letter, it is a privilege to oversee the teamwork among the Smart Card Alliance's 220 committed organizations, individuals, and Alliance staff as they oversee the changes and opportunities happening "hand over fist" as we look ahead to 2015. I hope that this edition of the **2014 Annual Review** provides you with valuable insight into all that our community of industry leaders has accomplished this year, and gives you some perspective into what lies ahead.

Randy Vanderhoof
Executive Director
Smart Card Alliance

Strong Staff Provides Backbone for Successful Projects

As I complete the first year of my second term as Chairman of the Board of Directors, I see nothing but opportunity for the Smart Card Alliance, an organization that has clearly established itself as the go-to, objective industry resource. A review of 2014 must begin by thanking the entire staff of the Smart Card Alliance for their steadfast contribution to keeping the wheels of the Alliance turning. The small, hard-working staff thrives under Randy Vanderhoof's leadership. We are fortunate to have Randy continue to serve as executive director of our fine organization.

The Smart Card Alliance continues to evolve into a mature organization, and as such, growth in terms of membership and revenue has slowed. But like any business, key events in the marketplace present future opportunities. Over the last year, there were several of those key events, such as major data breaches of companies who were actually doing a "good" job of protecting customer data. And now that the Apple iPhone 6 has NFC capabilities, and the Apple Pay service was announced, the accumulated knowledge and work of the Alliance will be leveraged even more. Any time security technologies are discussed both in government and private industry, the Alliance is consulted for information, statistics and other valuable resources. The changing landscape in government ID, continued data breaches in all industry sectors, and the reenergizing of mobile payments will keep the Smart Card Alliance and the EMV Migration Forum active.

The EMV Migration Forum, their Working Committees, and the Alliance Councils continue to generate "products" at a feverish pace that make the Smart Card Alliance relevant in the market. Among the most exciting initiatives for the Alliance in 2014 was our agreement with GSA to provide training and certification for system engineers who set up and test enterprise physical access control systems (EPACS) to align with government-wide specifications. This new program, approved by the GSA, is called CSEIP, and has already certified a number of engineers. I look at the agreement with GSA as recognizing what the Alliance does best – disseminate smart card related information and training in an fair and impartial manner.

Driving all of these activities and corresponding events is stretching the staff quite thin, so we will continue to add necessary staff at a measured pace to support the many initiatives. I would like to point out the economic value of the deliverables the Alliance creates. Think about all of the hours each participant invests in Council and EMV Migration Forum projects. Then attach a per-hour dollar value. If an individual company were to pay for such projects, there is no way a body of knowledge such as that of the Alliance would be available to the market. And most of all, the deliverables are objective and unbiased.

Over the last year, we have achieved some major accomplishments. I am honored to chair the board, another tireless group of individuals who work many hours in addition to their own day jobs. The board's strategic guidance has allowed Randy and his team to reach milestones and work with a collective mindset to produce programs that benefit Alliance members and the entire smart card industry.

So, I would like to thank all of the members for supporting this fantastic organization and allowing your delegates to participate and contribute in Alliance activities. Because, as I mentioned before, without the contribution of the industry, the Smart Card Alliance would not be able to deliver the value the market and membership have come to expect.

Willy Dommen
Senior Manager
Accenture

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

RANDY VANDERHOOF

Executive Director
rvanderhoof@smartcardalliance.org

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, Smart Card Alliance
Latin America & the Caribbean
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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.

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.

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

Conference Services Coordinator
kkrebs@smartcardalliance.org

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
nlauzon@smartcardalliance.org

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
dmarshall@smartcardalliance.org

Debbie's responsibilities include effectively identifying goals to align positioning and messaging into seamless communications for the association and its member companies. Debbie 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 is responsible for communications for the EMV Migration Forum, writing announcements and updates on the Forum, coordinating content on the EMV Connection website, and managing the communications for EMV meetings.

Debbie spent the bulk of her career at Comcast, where she served as the Regional Director of Communications. She began her career working for a newspaper 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 Pershing/Bank of New York Mellon, Siemen's,

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
cmedich@smartcardalliance.org

Cathy Medich is Director of Strategic Programs for the EMV Migration Forum and the Smart Card Alliance. In this role, she manages strategic marketing and industry initiatives and directs industry council and working committee activities. 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
Events Consultant
bill@cnxtd.com

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.

LARS R. SUNEBORN, CSCIP/G, CSEIP
Director, Training Programs
lsuneborn@smartcardalliance.org

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 nationwide enterprise PACS network for 700+ locations.

SHELBEY VOTAPEK
Communications Consultant
svotapek@smartcardalliance.org

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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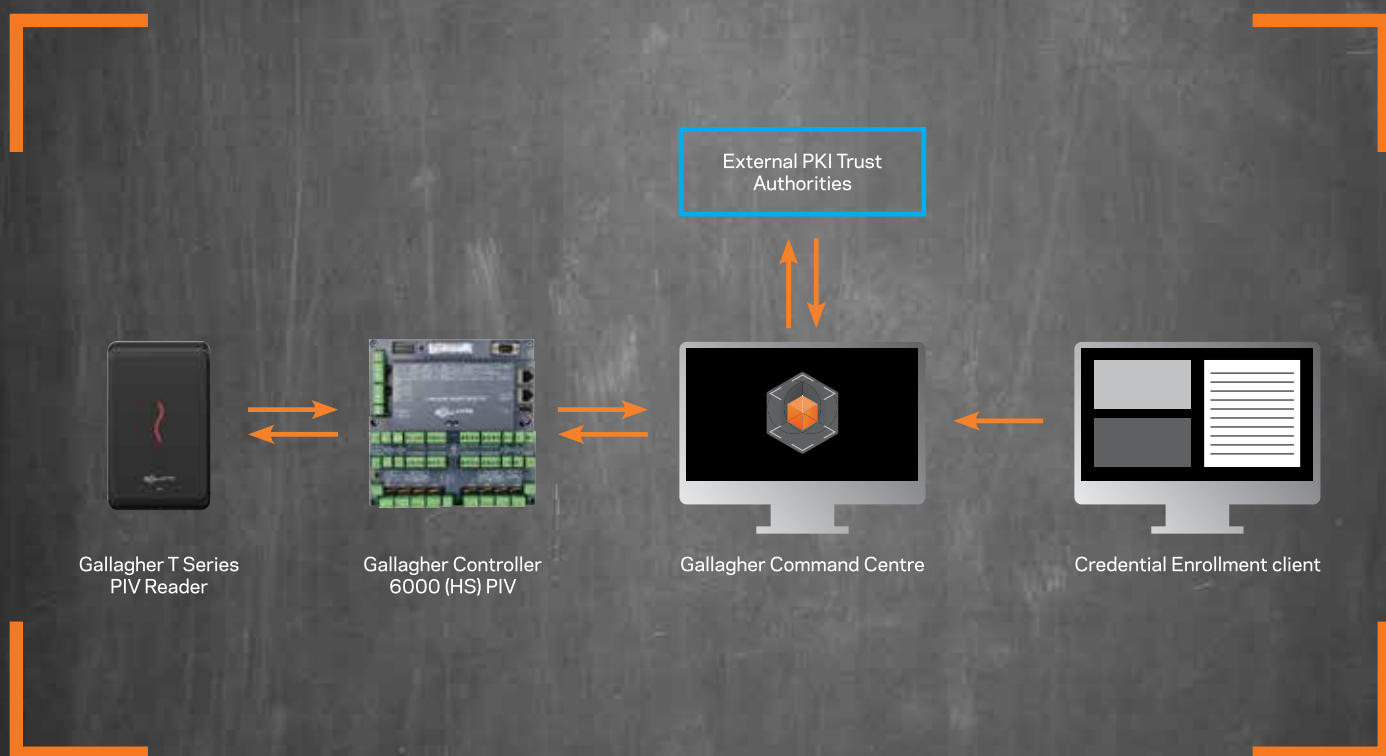
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VeriFone, Inc. – SCALA
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Vix Technology
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    Authority (WMATA)
Watchdata Technologies – SCALA
Watchdata Technologies Pte Ltd
Wells Fargo
Xerox
XTec, Incorporated

As of October 15, 2014

Leadership Council

Membership Benefits

Your membership dollars support the council initiatives, networking meetings and industry events, web site development, marketing programs, newsletters, 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.

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 our 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

A true open payments system that's easy to integrate.

Our open payments solution reduces operating costs, enhances data collection and decision-making, and makes it easier for riders to get around. The underlying technology is non-proprietary, taking advantage of open standards, open architecture and COTS hardware and software. We incorporate strong risk management protocols and real time account balances, protecting agencies' revenues, while extending the security, speed and convenience of contactless retail transactions to transit.

We're proud to be delivering the New Payments Technology (NPT) system to the Southeastern Pennsylvania Transportation Authority (SEPTA). Scan the QR Code below to find out more about this project.

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2014 MEMBER SURVEY

REPORT ON MEMBER SATISFACTION AND VALUE OF ALLIANCE ACTIVITIES

"The Smart Card Alliance allows for a variety of venues to share and learn from industry leading experts, customers, competitors and consultants regarding the rapidly evolving smart card industry across various markets."

— Jim Ellis, CEO
ABnote, Custom Card Systems

Satisfaction with Smart Card Alliance activities continues to be high, with strong increase in overall satisfaction and high satisfaction for many activities. We had 140 members from 77 member organizations (45.8% of all member organizations) respond to our June 2014 survey.

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 87.0, an increase from 2013's 85.7 rating and the highest overall rating since 2007. Satisfaction is good across all member categories, with 91.0% of members rating the Alliance above 80.

In addition to the composite satisfaction rating, the survey asked members to rate satisfaction with a variety of Alliance activities and programs. A scale of one to five was used, with five the highest satisfaction. Our overall rating for all activities was 4.05; activities with ratings over 4 included:

- 2014 Payments Summit
- White papers and reports
- 2013 Member Meeting
- 2013 Government Conference
- Industry council participation
- EMV Connection web site
- Smart Card Alliance public and members-only web sites
- 2014 NFC Solutions Summit
- Quarterly newsletter and monthly Alliance Member News Bulletins

VALUE OF ALLIANCE ACTIVITIES

Council deliverables, Alliance communications and Alliance events had high value

ratings. Activities rated as highest value in the 2014 survey were:

- White papers, reports and resources
- Smart Card Alliance website resources – public and member sites; EMV Connection
- Email announcements about Alliance events
- Conferences: complimentary and discounted registration; speaking opportunities
- Industry council participation and deliverables

BENEFITS OF ALLIANCE MEMBERSHIP

Member responses on top benefits of Alliance membership echoed the survey value ratings – reinforcing the importance of the Smart Card Alliance events and industry collaboration activities. Top benefits mentioned in the 2014 survey were:

- Networking
- Industry education and information
- Staying abreast of industry news, status and trends
- Leadership and visibility in the industry

Benefits in the words of a few members included:

"The organization and management of information coming through the Smart Card Alliance is excellent. The Smart Card Alliance always keeps things moving forward and highlights the right things at the right time. The Smart Card Alliance is forward thinking and forward looking."

"The member councils are extremely valuable to me and my business as they provide a focused forum for in-depth research and discussion on key topics that directly impact what I do."

"The Smart Card Alliance allows for a variety of venues to share and learn from industry leading experts, customers, competitors and consultants regarding the rapidly evolving smart card industry across various markets."

INDUSTRY COUNCIL INVOLVEMENT

Over 70% of survey respondents reported that they participate in one or more industry councils, with our Payments, Mobile and NFC, and Access Control Council members strongly represented in this year's survey. Overall satisfaction for Council activities increased again in 2014, with an overall rating of 4.26 and "very satisfied" ratings in all categories.

IMPORTANT INDUSTRY ISSUES

The most important industry issues noted in this year's survey are consistent with those we've seen in the past few years. The use of mobile devices across all applications – payment, access control, transit – and new mobile technologies like Host Card Emulation (HCE) were the most important topics in this year's survey (25 responses). EMV followed this with 20 responses and transit with 10 responses.

The industry councils were established to work on key industry issues, with survey responses providing important input into their planning. Smart Card Alliance members are also able to take advantage of membership fee discounts to join the EMV Migration Forum, our affiliated organization focused on EMV migration in the U.S. The EMV Migration Forum is working on a variety of projects to address technical and/or communications challenges for U.S. migration and welcomes new members.

We thank everyone who responded to the 2014 member survey! The survey provides extremely valuable input in developing plans for the coming year.

"So far, everything the Alliance has to offer has been very well done and educational for someone fairly new to the industry."

— Reneil Magday, Field Application Engineer Allegion

"The Smart Card Alliance staff succeeds in their strong efforts to connect with Alliance members - thank you!"

— Norman Kort, Manager Electrical Engineering Group Cubic® Transportation Systems, Inc.

Each quarter, we profile a Leadership Council member company in our Smart Card Talk industry 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 2014 MEMBER PROFILE (MARCH)
HP Enterprise Services

Lolie Kull

HP, the world's largest technology company, brings together a complete portfolio that spans services, printing, personal computing, software and IT infrastructure to solve customer problems. HP Enterprise Services is a leader in delivering technology services and business solutions for commercial and public sector customers. Working within the U.S. public sector, the company understands the unique missions and requirements of government agencies and can help address key priorities and technology challenges to deliver innovation that helps organizations achieve critical outcomes. In the cybersecurity industry, the company specializes in solutions for Identity, Credentialing & Access Management (FICAM), Continuous Monitoring, and Application Security.

Smart Card Talk spoke about the company's profile and offerings with Lolie Kull, who has been with HP Enterprise Services for almost eight years and has extensive experience within the Federal Government supporting its identity, credentialing and access management initiatives.

"HP believes that security, especially identity and access management, is most important and where cloud, security, big data, and mobility all converge," said Kull. "As clients look to expand their enterprise businesses into the cloud, security remains on the forefront of their objectives. The primary market trend focus for HP is what we call the 'new style of IT.' It enables organizations to capitalize on cloud-based computing and applications, BYOD management, social identity integration and mobile applications development and management."

"Smart card technology is the foundation for secure authentication and authorization to enable user access."

Q2 2014 MEMBER PROFILE (JUNE)
Gemalto North America

Neville Pattinson

Gemalto enables organizations to offer trusted and convenient digital services to billions of individuals. The company's expertise spans the entire process of creating digital security solutions for clients and their customers, developing secure software and operating systems which they embed in devices such as UICC cards, banking cards, tokens, electronic passports or ID cards. They personalize the devices, and deploy the software and services for managing them and the sensitive data they hold throughout its life-cycle.

Smart Card Talk spoke about the company's profile and offerings with Neville Pattinson, SVP Government Sales. Pattinson, who holds three industry designations – CISSP, CIPP and CSCIP, is also the technical vice-chairman of the Smart Card Alliance. He previously served on the Department of Homeland Security's Data Privacy and Integrity Advisory Committee.

"At the core of our business is the development of software which we configure and embed in a multitude of different devices and form factors," said Pattinson. "Our solutions and services include numerous payment cards, secure eBanking devices, authentication tokens, machine identification modules (MIM), and secure ID documents including ePassports, eID and eHealth cards, as well as eDrivers' licenses. As traditional smart card technology continues to develop and innovate, form factors such as mobile derived credentials will bring new opportunities to the industry. Gemalto's vision is to provide digital security solutions and services that enable citizens, employers and governments to have the security needed to live their lives freely and conveniently."

"How we secure our mobile devices continues to be a topic of discussion."

Xerox

Q3 2014 MEMBER PROFILE (SEPTEMBER)
Xerox

Michael Nash

Xerox offers business process outsourcing and IT outsourcing services, including data processing, healthcare solutions, HR benefits management, finance support, transportation solutions, and customer relationship management services for commercial and government organizations worldwide. The company also provides extensive leading-edge document technology, services, software and genuine Xerox supplies for graphic communication and office printing environments of any size.

Smart Card Talk spoke about the company's profile and offerings with Michael Nash, Senior Vice President: Public Transportation (Fare Systems). Nash, who has knowledge of the transportation and financial service industries, leads global new business development initiatives for the company's public transit sector.

"Smart cards are a key component of all current transit fare payment contracts," said Nash. "We took an early lead in supporting smart-card-based systems by implementing the first open payment smart card fare system in North America in Gatineau, Quebec and followed years later with the first multi-agency open payment fare system, the NY/NJ Transit Trial. We use our expertise to support ISO standards committees in developing new standards for smart card technology. Smart cards provide the security and speed needed to support modern fare collection and play a vital role whether the technology is in a card, other device or a mobile phone."

Nash noted that education is critical. "Educating consumers about the technology, financial system infrastructure and its use, its costs and benefits, and consumer adoption is critical since objective information can help demystify the transition."

Giesecke & Devrient

Q4 2014 MEMBER PROFILE (NOVEMBER)
Giesecke & Devrient (G&D)

Brian Russell

G&D has been developing security solutions for over 160 years, and provides a comprehensive suite of technology products and services to deliver secure digital payment solutions for our customers. Today, the company is a world leader in pioneering technologies that secure how people pay, communicate, and authenticate. Their solutions, products, and services range from innovative hardware and software to end-to-end solutions for EMV, SIM and device management, LTE, mobile authentication, subscription management and M2M, as well as NFC for secure elements and HCE. G&D is also the leading company in the world to offer banknote and security printing, security paper, and banknote processing.

Smart Card Talk spoke about the company's profile and offerings with Brian Russell, senior vice president, Payment and Transit, for G&D's U.S. Mobile Security Division. He has also been a member of the Board of Directors Executive Committee for the Smart Card Alliance for the past four years.

"For G&D, it's all about securing credentials," said Russell. "We've developed smart card technology, driven standards to ensure interoperability, educated our customers and built strong relationships with banks, mobile network operators, transit authorities, governments and corporations. We have a unique ability to help bridge the gaps in the new ecosystem – with partnerships and technology – and to help drive adoption of new technology, such as NFC or tokenization," he said.

"G&D continually develops new products and services to meet market demands and innovations to eliminate obstacles to smart card adoption, and works on security mechanisms needed for the trusted execution environment."

COE
CENTER OF EXCELLENCE
Smart Card Alliance
2014

Congratulations to the Class of 2014

We are delighted to announce the 17 member companies who comprise the second year class of Center of Excellence (COE) organizations. These Center of Excellence organizations will be recognized in a number of ways throughout 2015.

- American Express
- CPI Card Group
- Cubic Transportation Systems
- Deloitte & Touche LLP
- Discover Financial Services
- Gemalto
- Giesecke & Devrient
- Ingenico
- MasterCard
- NXP Semiconductors
- Oberthur Technologies
- Softcard
- TSYS
- UL
- Visa, Inc.
- Xerox
- XTec, Incorporated

Inclusion in this exclusive level is directly related to the following criteria members demonstrated in 2013-2014:

- Industry Council recognition for Honor Roll membership or Top Contributor to one or more of our Industry Councils
- Council officer position elected by your 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)

Alliance Honors 2013 COE Recipients

The Smart Card Alliance is proud to be a member-based organization that reflects the commitment and inclusive spirit toward understanding, adoption, use and application of smart card technology. 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.

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

The Center of Excellence organizations were recognized in a number of ways throughout 2014, including a company profile in the Smart Card Alliance Monthly Member Bulletin. Excerpts of those profiles appear here; visit the Smart Card Alliance website for the complete text.

JANUARY 2014
Cubic Transportation Systems, Inc.

Cubic Transportation Systems, Inc., is a leading integrator of payment and information technology and services for intelligent travel solutions. Cubic delivers integrated systems for transportation and traffic management, delivering tools for travelers to choose the smartest and easiest way to both travel and pay for their journeys, as well as enabling transportation authorities and agencies to manage demand across the entire transportation network – all in real-time. Cubic specializes in design, development, manufacture, supply, installation, integration, services and information. The company also provides on-site management, central systems, operations support, patron support, business support and field services.

Visit Cubic at cts.cubic.com.

FEBRUARY 2014
ABnote

Founded in 1795 as one of the nation's first security printers, ABnote today is one of the premier manufacturers of plastic cards and solutions provider. The company's products span a range of markets and applications, including retail, financial, hospitality, transit, education and identification. Their global facilities are certified by all major financial card brands for magnetic stripe and chip card production, personalization and Trusted Service Manager (TSM) services. ABnote is a leader in developing TSM and NFC technologies, and operates certified TSMs throughout the world for the secure provisioning of EMV cards and mobile devices.

Visit ABnote at www.abnote.com.

APRIL 2014
HID Global

HID Global, an ASSA ABLOY Group brand, is a worldwide leader in technology related to the creation, management and use of secure identities and serves markets including physical and logical access control including strong authentication and credential management; card printing and personalization; visitor management systems; secure government and citizen ID; and RFID technologies used in animal ID and industry and logistics applications. Products are sold through OEMs, developers, systems integrators and distributors. End-users include Fortune 1000 customers, and businesses and organizations in most industry sectors, including government, healthcare, retail, industrial, commercial, transportation, finance and education.

Visit HID Global at www.hidglobal.com.

MAY 2014
Capgemini

A leading partner and solutions provider to banks and issuers worldwide, Capgemini is one of the world's foremost providers of consulting, technology, outsourcing and local professional services with presence in 44 countries and more than 130,000 employees. With a network of 21,000 professionals serving over 900 clients worldwide, Capgemini collaborates with leading banks to deliver business and IT solutions with thought leadership which creates tangible value. Capgemini has served the global cards industry for more than 17 years by offering services and expertise on all leading platforms and technologies across the Americas, Europe, Asia and Australia.

Visit Capgemini at www.capgemini.com.

JULY 2014
XTec, Incorporated

XTec is the premier provider of authentication and security solutions in today's marketplace. Their keystone solution, AuthentX, offers the only end-to-end, high assurance identity management infrastructure available for government and commercial enterprises. Smart card credentials anchor XTec's identity management and credential management solutions. Its history and its future as a company are intertwined with the evolution of smart card technology. Several decades ago, some members of XTec's staff served as writers for the original Government Smart Card Interoperability Specification, the precursor to today's PIV requirements. The company proudly has 26 current Certified Smart Card Industry Professionals/Government (CSCIP/G) recipients.

Visit XTec at www.xtec.com.

AUGUST 2014
Ultra Electronics ID (Ultra ID)

Ultra ID manufactures identity solutions for government and corporate identity security applications. They are part of the Ultra Electronics Holdings group, an internationally successful defense, security, transport and energy company. Products include Magicard card printers, UltraSecure technology cards and TrustID badging software. The Magicard range of secure ID card printers are trusted by governments and companies around the world to issue millions of secure identification badges every year. All Magicard printers are manufactured at their secure facility in the United Kingdom and support enhanced card security features, including their patented HoloKote® watermark for visual security.

Visit Ultra ID at www.ultraid.com.

OCTOBER 2014
Southeastern Pennsylvania Transportation Authority (SEPTA)

The Southeastern Pennsylvania Transportation Authority (SEPTA) was created by the Pennsylvania state legislature in 1964. As the nation's sixth largest public transit agency, the Authority serves Philadelphia and its adjacent suburban counties by transporting 1.2 million daily passengers over a network of bus, trolley, subway and railroad lines. This network extends well into the neighboring states of New Jersey and Delaware, covering a 2,200 square mile region that is home to a population of four million residents. SEPTA responds to a variety of travel market needs defined by geography, population, trip purpose and physical capabilities of its riders.

Visit SEPTA at www.septa.org

Training and Certification Programs

The Smart Card Alliance is strongly committed to offering members education programs, training opportunities and resources so they can remain competitive in the marketplace. Our robust programs include:

- The Leadership, Education, and Advancement Program (LEAP) an online, members-only organization for smart card professionals
- The Smart Card Alliance Educational Institute, which offers online and classroom-based courses covering smart card technology and applications
- Certified Smart Card Industry Professional (CSCIP), an internationally recognized credential for smart card industry professionals

Over the summer we launched our new Certified System Engineer ICAM PACS (CSEIP) training and certification program. This program provides advanced training for systems engineers on how to set-up and test E-PACS to align with government-wide specifications.

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 resources and materials including white papers, FAQs, position papers and archives of webinars, workshops and conference proceedings in the access security, payments, identity, healthcare, mobile and transportation markets, all of which are updated regularly. LEAP membership also offers plenty of 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.

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.

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.

Depending on 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 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, participation in these programs demonstrates employers' commitment to maintaining highly skilled workers.

2014 CSCIP Recipients

James S. Berkowicz, Sprint
Maryann Elwell, Deloitte & Touche LLP
Greg Freeman, WMATA
Solmoraine Guzman, Smart Card Alliance
David O'Toole, WMATA
Minesh Patel, Gemalto
Vicky Redman, Gemalto
Anshuman Sinha, Tyco Integrated Systems
Paul Snelling, Gemalto
Phuong Tran, WMATA

2014 CSCIP/G Recipients

Christine Abruzzi, Deloitte & Touche LLP
Nathan Palenski, XTec, Incorporated
Steven Quade, ICFI
Nigel Stewart, Secure Mission Solutions

2014 CSCIP/P Recipients

Manuel Albers, Euro Tech Sales LLC
Ravi Bajaj, MasterCard Worldwide
Manish Deliwala, American Express
Allen Friedman, Ingenico, North America
Venugopala Narayanappa Medahalli, CSC
Docia Myer, CPI Card Group
Phillip Taylor, TSYS
Robert M. Thompson, CIBC
Hari Varma, Infosys Ltd.
Carlos Alberto Duque Vasquez, Xtrategies

As of October 20, 2014

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

2014 Professional Certification Trainers

BRETT CHEMALY, CSCIP Trainer
Discover Financial Services

Brett works for Discover Financial Services as Manager – Global Chip Products, where he currently focuses on debit-related matters affecting the U.S. payments industry. Prior to joining Discover, he was employed within MasterCard's Emerging Payments team based in Toronto, Canada, where he was responsible for managing and consulting on MasterCard's chip programs on both sides of the border. Prior to his tenure in Canada, 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.

STEPHEN HOWARD, CSEIP Trainer
CertiPath

With more than 25 years of experience on the front lines of meeting the challenges of identity management and information assurance in his role as VP of Credentials, Steve serves CertiPath in four core aspects: operational authority for the CertiPath Bridge Certification Authority; subject matter expert in PIV/PIV-I technology and its application in FICAM solutions; product development; and active support to develop government and industry standards around strong identity and its operational use.

His focus within ID management over the last 15 years has allowed him to contribute to standards defining identity credentials, operational use of identity credentials, and the technologies that are appropriate for a given application environment's needs for identity. These efforts span several government-issued ID documents, design concerns around breeder documents, public key infrastructure technology and services, and operational use of ID within federal/state/local government, enterprise and aviation security.

Steve holds a Bachelor of Science in Computer and Communication Sciences from the University of Michigan.

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

Bryan Ichikawa is a Senior Manager for Deloitte's Enterprise Risk Services group based out of Arlington, Virginia. As 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 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, and has received the 2008 OSCA Individual Leadership award from the Smart Card Alliance. 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.

GERALD SMITH, CSCIP Trainer
ID Technology Partners

Gerald Smith is a Senior Consultant with ID Technology Partners, a leading consulting firm in Washington, DC, 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 system 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. SUNEBORN, CSEIP Trainer
Smart Card Alliance

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 for specialized training requirements, Lars 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 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 chair 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 nationwide ePACS network for over 700 locations.

RICK UHRIG, CSCIP Trainer
XTec, Incorporated

Rick Uhrig is a Senior Manager with XTec, Incorporated, a leading provider of trusted products and services for authentication and security solutions. Rick has more than 25 years of experience designing, developing and evaluating information security solutions, including 15 years with smart card solutions.

MAKING LIFE SAFER AND EASIER

YourBank

To secure your
online bank access,
please place
your credit card
on the back of your phone

SAFRAN
Morpho

SMART CARD ALLIANCE MEMBER MEETING

Biltmore Hotel, Coral Gables, Florida
December 8-10, 2013

Created exclusively for the benefit of Smart Card Alliance and SCALA members, this event brought together members representing all of the markets impacted by smart card technology. Special keynote speakers, panel discussions, in-depth breakout sessions organized by the Alliance Industry Councils, as well as networking and social events during a pre-conference day rounded out this well-attended conference. The Alliance also recognized the many achievements of its industry councils and member companies at a special awards dinner.

2014 PAYMENTS SUMMIT

Grand America Hotel
Salt Lake City, Utah
February 5-7, 2014

More than 600 individuals in the EMV chip card and mobile payments attended this event, including representatives from banks, card brands, mobile wallet providers and transit agencies. Industry leaders discussed and debated the unique considerations for the U.S. payments system in its move to EMV chip payments and mobile devices in retail and transit. Considerable time was also spent on NFC-based mobile wallets, security considerations, implementation, cardholder verification methods (CVMs) and ATM upgrades.

NFC SOLUTIONS SUMMIT 2014

Renaissance Arboretum Hotel
Austin, Texas
June 3-4, 2014

With the Lone Star State taking over event hosting duties from the Golden State, more than 200 people attended this event, presented by the Smart Card Alliance in partnership with the NFC Forum and NFC World Congress. What emerged from the summit was the belief that mobile NFC technology is in the running for widespread U.S. adoption for both non-payment and payment applications. And technologies and architectures like HCE, BLE and EMV will complement and propel the technology forward.

HSPD-12 10TH ANNIVERSARY EVENT

Marriott Metro Center Hotel
Washington, D.C.
July 31, 2014

Government leaders and federal agency heads highlighted this event that celebrated the 10th anniversary of the landmark security directive HSPD-12, signed by President George W. Bush in 2004. The directive drove momentous change in the way the U.S. federal government manages employee and contractor identities and access to government facilities, leading to higher levels of cybersecurity and efficiency. Keynote presentations reflected on the past, present and future of identity and security in government.

2014 GOVERNMENT CONFERENCE

Washington Convention Center
Washington, D.C.
October 29-30, 2014

This leading event in the nation's capital on ID security featured more than 75 government and industry leaders speaking on topics related to strong authentication technology in government identity programs. More than 650 government employees participated in sessions on PIV credentials, government-focused efforts in the National Strategy for Trusted Identities in Cyberspace (NSTIC) initiative, trusted ID on mobile devices, developments in state and local ID programs and global trends in secure identification.

SAVE THE DATE FOR THESE 2015 EVENTS

THE 8TH ANNUAL CONFERENCE

2015 Payments Summit
Payments at a Higher Level

February 3-5
Grand America Hotel, Salt Lake City

PAYMENTS SUMMIT
Smart Card Alliance

Smart Card Alliance

14TH ANNUAL

GOVERNMENT CONFERENCE

Smart Strategies for Secure Identity

June 9-10, 2015

WALTER E. WASHINGTON CONVENTION CENTER • WASHINGTON, DC
www.GovSmartID.com

Smart Card Alliance

Member Meeting

OCTOBER 4–6, 2015
ARIZONA GRAND RESORT • PHOENIX, ARIZONA

Smart Secure Mobile Payments & Non-Financial NFC Apps

PRESENTED BY
Smart Card Alliance

NFC
SOLUTIONS SUMMIT

OCTOBER 7-8, 2015
ARIZONA GRAND RESORT, PHOENIX, ARIZONA

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.

Target Breach Shakes Up Industry

The aftershocks of the massive data breach of an estimated 40 million credit and debit cards suffered by Target during the holiday season have triggered questions on payments security. During the media frenzy that followed, the one question continually asked was; "Why is the U.S. market so far behind the rest of the world in using chip technology?" It's the most vexing and hardest for outside observers to understand; it's also the most difficult to explain in simple terms, because it requires unraveling the layers of how card payments work and offering a "defense" of the business practices that have evolved over 30 years. At minimum the breach will surely reshape the next two years' path to adoption of EMV chip cards in the U.S.

EMV Chip Cards vs. Mobile

My position on the future of mobile payments has never wavered. I have been patiently holding my enthusiasm in check for a "quick fix" to get to the time when NFC mobile wallets are ubiquitous – through six years of pilots involving NFC stickers, dongles, microSD plug-ins, phone sleeves and today's fully integrated UICC-enabled NFC handsets. The wait has not been without its starts and stops, with a few highs and lows. NFC is also competing against a host of other non-NFC wallet innovators like PayPal, LevelUp, and MCX. Plus, the annual "wait and see" from Apple adds more uncertainty to the mix. Nothing about payments is easy, so how could anyone expect NFC mobile proximity payments or any alternative mobile wallets to be different?

Healthcare's Identity Crisis

Having recently participated in a health IT symposium on privacy and security co-organized by our Health and Human Services Council and attended by nearly 50,000 professionals, what I learned about the state of America's free-market healthcare system, electronic health records and patient identity was enlightening and disturbing. After billions of dollars were spent turning paper into electronic health records

(EHRs), there is little or no agreement on how it should be exchanged – and virtually nothing on how those records should be protected. The symposium exposed the root problem of EHRs – there is no agreement about how to identify the patient. Despite hospitals collecting huge amounts of digital information about patient history, medical procedures and medications, that information is sometimes linked to the wrong patient.

A Warming Up for EMV Migration

The phrase "March comes in like a lion, and goes out like a lamb" is more than just a metaphor about the weather. It is also an appropriate description for the rapid changes to the payments industry climate regarding the progress in the U.S. adoption of EMV last month. The chill that hung over the EMV migration over the winter was unpredictable and somewhat frozen in place due to regulatory uncertainty and debit routing solution gridlock. Then, multiple massive data breaches of retail systems affecting up to 100 million consumer accounts triggered an avalanche of responses by industry groups, analysts, regulators, and government committees. The endless winter chill held the industry in its grasp, but when March came, everything began changing at once.

Prime Time for the Payments Industry

To "strike while the iron is hot" means to act while the best results can be obtained. This is true about the payments market, which is ramping up to produce up to 1 billion new EMV chip cards in the next three to five years. Although the U.S. is two years into a planned four year EMV migration, we expect to only reach 10% market deployment, or 100 million cards by year end. That means another 400 to 500 million cards are needed just to get to the halfway mark by the October, 2015, liability shift dates. To put these numbers into context, by this time next year, the U.S. market will have issued more EMV chip cards than the UK and Canada combined.

When Is Mobile Security Secure Enough

At the recent 3rd Annual NFC Solutions Summit, security was the hot topic. As discussions grew deeper, it became clear that Host Card Emulation (HCE), while still in its early years, has value in potentially opening up the NFC market to more participants. Questions remain unanswered about how reliable the communications between the phone and the cloud server would be, and what standards are needed on the device to manage applications sharing a single HCE port. But HCE could be the challenge that the secure element-based establishment needs in order to simplify its own architecture and lower the costs and barriers to entry for payments and non-payments applications, so secure element models can compete effectively with the HCE and cloud storage models being proposed.

The Case for Sound Security Measures

I was recently reminded of the classic cult movie, "Back to the Future," after I read of the problems at PF Chang's, the restaurant chain that revealed they had suffered a data breach due to malware infecting their POS system. Management determined the only way to keep their business open was to abandon their card processing equipment and bring back manual credit card slips until they can complete the forensic analysis of the malware attack and clean up their POS system. In the face of unknown threats to its retail POS systems, those handwritten two-part slips of paper dragged through the old "knuckle buster" credit slip imprint machines were the best solution for this merchant at this time. Back to the future indeed.

Recognizing a Secure Initiative

Late last month the Smart Card Alliance hosted a special government industry event commemorating the 10th anniversary of the signing of HSPD-12. This mandatory standard called for secure and reliable forms of ID for federal employees and contractors to access federally-controlled networks and facilities. The event, a one-day gathering in Washington, DC, attracted some of the most inspiring government identity and security leaders, all of whom gathered to recollect the challenges and the obstacles they had to overcome to get HSPD-12 implemented. I was honored to publicly recognize the many individuals who helped provide security to our nation in the face of those who are bent on destroying the best of this country – our citizens. Celebrating this anniversary ranks as a career highlight.

It's Complicated with Mobile

Apple finally jumped into the NFC mobile payments market using a secure element. While they didn't break new ground, this is a burst of energy for the fledgling mobile payments industry, since the iPhone commands a 41% market share in the U.S. and loyal customers are ready to upgrade after the iPhone 5 and 5s disappointments. What was more intriguing, though, was learning how they will use an individualized payment account token stored on the phone that can be linked to Apple's 800 million iTunes accounts on file. Also interesting is their agreement with American Express, MasterCard and Visa, and several large issuing financial institutions – that collectively represent a large percentage of those card relationships – to extend card-present rates for Apple Pay transactions.

Smart Card Credentialing Carries More Weight

As we prepare for the upcoming 13th Annual Smart Card Alliance Government Conference, I have a sense that the ground might shifting under what had been a firm foundation for federal smart card-based identity credentialing and access control based on HSPD-12 and the accompanying standards. So the timing is right for government policy and standards setters to come together at this conference and discuss just what lies ahead with technology providers and security integrators. I can't think of a more important time in the 10-year history of HSPD-12 for our smart card industry members to listen carefully and ask questions of our government leaders about the future of PIV, except for perhaps the first two years when the standards and policies were being drafted.

Destination Las Vegas for Payments

November marks the time when many Smart Card Alliance members make the annual journey to Paris to mingle with our European and Asian industry colleagues at the International Cartes Secure Connexions conference. For the first time in twelve years, I was not one of them. There was another option to choose here in the United States, a relatively new event called Money 2020, and I am very glad I chose to stay closer to home. The showing of over 7,000 mostly American attendees who also went to Las Vegas indicated I was not the only person who made the same choice.

WEB SITE HIGHLIGHTS

SMART CARD ALLIANCE WEB SITE HIGHLIGHTS
- Average site visits per month: 22,561
- Number of page views per visit: 1.98
- Over 70% new visits
- Links to Alliance, LEAP and CSCIP members-only resources
- Multi-media educational resources: videos, webinar recordings, slide shows
- Smart Card Alliance event registration and proceedings

MOST POPULAR WEB RESOURCES
- Smart Card Alliance white papers and publications
- EMV Migration Forum information
- Smart Card Alliance members
- Smart card technology primer and application information
- EMV frequently asked questions
- Smart Card Alliance events

TOP ACCESSED PUBLICATIONS & WHITE PAPERS
- Card Payments Roadmap in the U.S.: How Will EMV Impact the Future Payments Infrastructure?
- Card-Not-Present Fraud: A Primer on Trends and Transaction Authentication Processes
- Bluetooth Low Energy (BLE) 101: A Technology Primer with Example Use Cases
- EMV: Frequently Asked Questions
- EMV and NFC: Complementary Technologies that Deliver Secure Payments and Value-Added Functionality
- Host Card Emulation (HCE) 101
- Smart Card Technology in U.S. Healthcare: Frequently Asked Questions
- The Changing U.S. Payments Landscape: Impact on Payment Transactions at Physical Stores

EMV CONNECTION WEB SITE
- Over 57,000 visits from over 36,000 unique visitors
- EMV industry news and educational resources for issuers, merchants, acquirers/processors and consumers
- EMV Migration Forum webinar recordings: EMV 101; Effective Communication Practices for U.S. Chip Migration; Merchant Considerations for U.S. Chip Migration
- New resources from the EMV Migration Forum: Knowledge Center; Implementing EMV at the ATM; U.S. Debit EMV Technical Proposal
- EMV Migration Forum information and members-only web site

ACTIVE SOCIAL MEDIA PROGRAMS
- LinkedIn Groups: Government Smart ID – 1,926 members; Smart.Payments – 1,351 members; Healthcare Identity Management – 165 members; LEAP – 561 members
- Twitter: 810+ tweets, 3,189 followers
- Facebook: 369 "likes"

NEW IN 2014: PUBLICATIONS, WORKSHOPS, MEMBER BULLETINS, TRAINING PROGRAMS
- Smart Card Alliance Publications: Four new publications on Bluetooth Low Energy (BLE); Host Card Emulation (HCE); card-not-present fraud; and EMV, tokenization and encryption
- Educational Institute Workshops: Two new workshop videos on the changing U.S. payments landscape and NFC mobile security approaches and business applications (LEAP members only)
- Smart Card Alliance Member Bulletin: Monthly news bulletin distributed to all Alliance members covering key organization announcements and news
- LEAP/CSCIP Quarterly Bulletin: Quarterly publication distributed exclusively to LEAP members and CSCIP recipients
- CSEIP Certification Program: New training and certification program for systems engineers on how to set-up and test E-PACS to align with government-wide specifications

Over 203,000 visits from over 157,000 unique visitors

Streamlined home page navigation

Over 18,000 downloads of publications and presentations

Member access to event proceedings and resources

Number of page views per visit – 1.98

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INDUSTRY COUNCILS

Through six industry councils, the Smart Card Alliance proactively addresses topics of key concern in the different smart card vertical markets. 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 implementations in the U.S. and provide authoritative educational material for both the U.S. and international smart card markets.

Access Control

The Access Control Council's 2014 activities focused on providing guidance on smart card implementation in government credentialing initiatives, submitting comments on draft NIST specifications, and expanding efforts in mobile identity and the commercial access control market. The Council is made up of more than 143 individuals from 49 leading organizations.
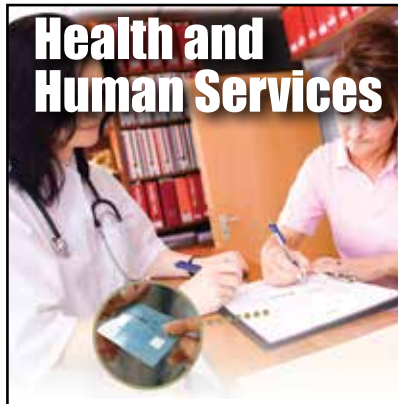
Health and Human Services

The Health and Human Services Council focused on outreach in 2014, delivering educational sessions at key healthcare industry events. The Council has established relationships with other healthcare industry associations to provide smart card expertise to their efforts. More than 60 individuals from over 30 leading organizations participate in the Council.
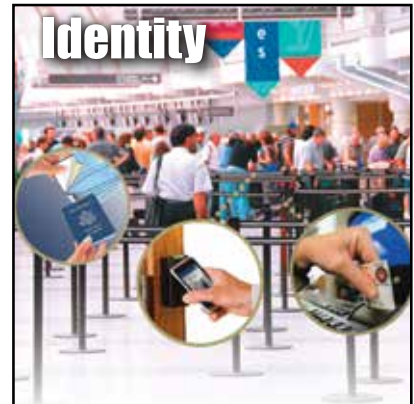
Identity

The Identity Council's 2014 activities focused on collaboration with other councils to provide identity management expertise into the Alliance educational efforts. The Council collaborated on comment submissions to NIST, participated in one workshop, and led Alliance activities on NSTIC. More than 100 individuals from over 47 leading organizations participate in the Council.

Mobile and NFC

The Mobile and NFC Council activities in 2014 included strong educational programs and development of technical resources. The Council produced one mobile/NFC workshop, collaborated with other councils on two workshops, and completed two white papers on important emerging technologies. The Council is made up of more than 167 individuals from 70 leading organizations.

Payments

The Payments Council continued its focus on payment innovations and strategies in 2014, while also providing educational resources on EMV. The Council led a workshop on EMV and mobile, published two white papers, and worked on other educational resources discussing how to mitigate risk from data breaches. The Council is made up of more than 190 individuals from 60 leading organizations.
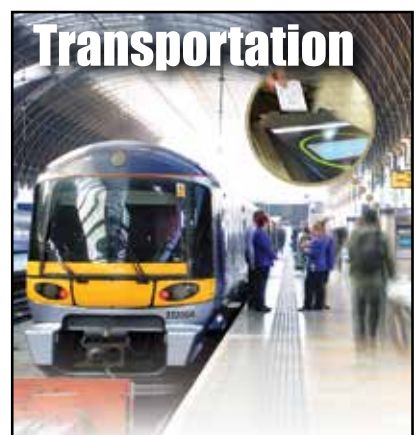
Transportation

The Transportation Council 2014 projects focused onaddressing challenges with acceptance of open contactless payment cards for transit fare payment. The Council launched two white paperson the impact of EMV migration on transit and parking and is defining several new projects for the coming year. More than 190 individuals from over 65 leading organizations participate in the Council.

Extraordinary Council Output Elevates Alliance as Go-To Industry Resource

2014 was a busy year for all markets using smart card technology – which translated into a very active year for all Smart Card Alliance councils. Each council sets its own agenda for activities, pursuing projects that best address the unique market needs of their industry segment. This means that we see a diverse set of activities depending on council priorities.

Councils tackled new payment technologies and approaches in 2014, providing educational resources to help the industry understand the role that smart card technology plays in securing transactions. With both new technologies emerging and data breach crises erupting, councils debated technology features, provided thought leadership to understand the market impact, and delivered industry guidanceto explain how new technologies and approaches fit together. Council deliverables ranged from white papers on Bluetooth Low Energy (BLE), Host Card Emulation (HCE), encryption and tokenization, to resources discussing card-not-present fraud and the role of EMV in mitigating the risk of data breaches, to discussions of the impact of new technologies on the transit and parking industries. The councils' work on new technologies and strategies has also been showcased at EMV Migration Forum events and has provided input into their U.S. EMV migration activities.

Councils also continued to have a strong presence in the government identity and security market, developing comments submissions to NIST and GSA and fielding workshops on mobile devices and enterprise physical access control systems (PACS). As a result of member feedback, councils extended their efforts to the commercial physical access control market in 2014 with a new project developing a guide specification for smart card-based PACS.

All councils are active in providing education programs in conjunction with Alliance and other industry events. We held four successful workshops in 2014, providing in-depth training on a diverse set of topics and delivering archived workshop recordings as a LEAP member resource. We expanded our educational outreach in the healthcare market as well, with featured speakers at two key 2014 events and ongoing collaboration with other healthcare-related industry groups.

Our annual Member Meeting is an important event for all of the councils. Councils propose and plan industry breakout sessions, targeting topics that will spark memberdialog and that will benefit from cross-industry collaboration. At this year's meeting, councils are hosting sessions on mobile technologies and applications, EMV, strong authentication, transaction security and device identity. With active cross-council discussion at this event, we "prime the pump" for council project ideas for the coming year.

2014 was also a council election year. We elect council steering committees and officers every two years, to provide all members with the opportunity to contribute to and lead industry initiatives. All councils completed their elections and we now have the leadership structure in place for 2015 and 2016. To our outgoing steering committees and officers, we offer our sincere thanks for the strong leadership that resulted in the excellent deliverables that keep the Smart Card Alliance as the go-to resource for the U.S. smart card industry.

The councils are successful due to the active engagement and commitment of many members from every industry segment. I'd like to especially thank the 233 members who were active in projects and the 99 members who are on our 2014 Council Honor Roll. 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.

Again, thanks to everyone who participates in our councils!

Cathy Medich
Director, Strategic Programs
Smart Card Alliance

INDUSTRY COUNCILS LETTER

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: Open - Lars Suneborn, Smart Card Alliance (acting)
- Vice Chair: Lolie Kull, HP Enterprise Services
- Secretary: Sal D'Agostino, IDmachines

STEERING COMMITTEE

- Dave Adams, HID Global
- Salvatore D'Agostino, IDmachines
- Tony Damalas, Damalas LLC
- Michel Escalant, Gemalto
- Frazier Evans, Booz Allen Hamilton
- Walter Hamilton, Identification Technology Partners
- Dave Helbock, XTec, Incorporated
- Andy Kuchel, Quantum Secure Inc.
- Lolie Kull, HP Enterprise Services
- Roger Roehr, Roehr Consulting
- Steve Rogers, IQ Devices
- Adam Shane, AMAG Technology
- Mike Sulak, Department of State
- Joe Tassone, Identive Group
- Mike Zercher, NXP Semiconductors

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- Steve Rogers, IQ Devices
- Adam Shane, AMAG Technology

HONOR ROLL

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- Salvatore D'Agostino, IDmachines
- Tony Damalas, Stanley Security Solutions
- Frazier Evans, Booz Allen Hamilton
- Christophe Goyet, Oberthur Technologies
- Walter Hamilton, Identification Technology Partners
- Dave Helbock, XTec, Incorporated
- Lolie Kull, HP Enterprise Services
- Stafford Mahfouz, Tyco Software House
- Roger Roehr, Roehr Consulting
- Steve Rogers, IQ Devices
- Adam Shane, AMAG Technology
- Mark Steffler, Quantum Secure
- Mike Sulak, U.S. Department of State
- Lars Suneborn, Smart Card Alliance (formerly Identiv)
- Mike Zercher, NXP Semiconductors
- Rob Zivney, Identification Technology Partners

2014 ACTIVITIES

- Submission of letter and recommendations to Interagency Security Committee

- ISC West workshop, *Mobile Devices and Identity and Access Control Applications*, in collaboration with the Identity and Mobile and NFC Councils

- Submission of comments to NIST on draft SP 800-157, in collaboration with the Identity Council

- Submission of comments to NIST on draft SP 800-73-4, in collaboration with the Identity Council

- Submission of comments to GSA on the "FIPS 201 Evaluation Program Functional Requirements & Test Cases (FRTC) version 0.1.3"

- 2014 Government Conference workshop, *Personal Identity Verification (PIV) in Enterprise Physical Access Control Systems (EPACS)*

- *Guide Specification for Architects & Engineers for Smart Card-Based PACS Cards and Readers for Non-Government PACS*, project in process

- Completion of Council Steering Committee and officer elections

- Relationships with IBIA and SIA

ACCESS CONTROL COUNCIL MEMBERS

3M Cogent, Inc. • ABnote • Accenture • Advanced Card Systems Ltd. • Allegion • AMAG Technology • Athena Smartcard Solutions • Booz Allen Hamilton • CH2M HILL • Codebench, Inc. • CSC • Cubic Transportation Systems • Datacard Group • Datawatch Systems • Defense Manpower Data Center (DMDC) • Deloitte & Touche LLP • Eid Passport Inc. • ENTRUST • Exponent • Gemalto • General Services Administration • Giesecke & Devrient • HID Global • HP Enterprise Services • Identification Technology Partners • Identiv • IDmachines • Initiative for Open Authentication • IQ Devices • Leidos, Inc. • Lenel Systems International • Morpho • NagraID Security • NXP Semiconductors • Oberthur Technologies • Probaris • Quantum Secure Inc. • Roehr Consulting • SAIC • Secure Missions Solutions, Inc. • Stanley Security Solutions • STMicroelectronics • Tyco Software House • Ultra Electronics Card Systems • U.S. Department of Homeland Security • U.S. Department of State • U.S. Department of Transportation/Volpe Center • Washington Metropolitan Area Transit Authority (WMATA) • XTec, Incorporated

Council Benefits from Updated Government Standards and Policies

As usual, 2014 was a year full of activities for the Access Control Council. Most notably, this was a year when both NIST and GSA updated many of the Federal standards and policies that affected our activities in Federal Identity Control and Access Management (FICAM).

Perhaps one of the most significant, in regards to industry impact, was the meeting with the GSA Evaluation Program Technical Working Group (EPTWG) in late 2013 The Council suggested and made the case that deployed physical access control systems (PACS) are dynamic in configuration, software, firmware or hardware components. Post deployment, systems are expanded, and receive updates and "patches" from manufacturers of the various components and subsystems.

The Access Control Council explained that having systems in certification and accreditation tests after each update is very costly and time consuming and suggested that this could be accomplished with a recognized FICAM accredited system engineer. The Council offered to assist in creating such an accreditation program. As a result of our efforts, GSA approached the Smart Card Alliance about setting up a training and certification program, and this resulted in the August launch of our Certified System Engineer ICAM PACS (CSEIP) program.

The Council also reached out to the Identity Council and, in a cross–council effort, submitted comments and suggestions to NIST on the SP800-157 Guidelines for Derived Personal Identity Verification (PIV) Credentials in April and SP 800-73-4 Interfaces for PIV Card Application in June. The derived credential comments were mainly focused on a derived PIV credential residing in a mobile device and the triggers for revoking a derived credential if the parent credential is revoked.

SP800-73-4 comments focused on establishing secure messaging and a virtual contact interface (VCI) between the card and a relying party reader in a user friendly, convenient manner without sacrificing security. A VCI would allow all contact interface functions that are available on a PIV card to be conducted by using the contactless interface of a mobile device.

> As a result of our efforts, 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.

The mobile device as a carrier of a high assurance credential was the theme for two full-day cross council workshops that included the Identity, Mobile and NFC, and Access Control Councils. The popularity of this topic resulted in an updated version of the same topics during ISC West in Las Vegas this past spring.

End-of- year activities include the annual Government Conference and workshop. This year's theme was PIV in enterprise PACS (EPACS) – very timely! In addition, the Council has undertaken a major project to develop a guide specification for contactless smart cards and readers for the commercial PACS market.

Many of the projects the council got involved in required collaboration and cooperation with industry organizations such as IBIA and SIA, with whom we enjoy very productive partnerships and who contributed greatly to our joint successes.

Lastly, I am honored to have the opportunity to serve in a new role as Smart Card Alliance Director of Training Programs. I stepped down as chairman of the Council in the recent election so that I can focus on my new position, and build world-class certification programs for industry professionals on ICAM EPACS and all aspects of smart card usage.

It has been a privilege and pleasure to serve with the brightest and most dedicated thought leaders in the industry. I appreciate the trust and cooperation during my tenure as Chair and welcome the new Chair. THANK YOU!

All indications are that 2015 will be just as busy and exciting!

Lars Suneborn
Director of Training Programs
Smart Card Alliance

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).

OFFICERS
- Chair: Sadiq Mohammed, MasterCard Worldwide
- Vice chair: Chandra Srivastava, Visa, Inc.
- Secretary: Deborah Baxley, Capgemini

STEERING COMMITTEE
- Deborah Baxley, Capgemini
- Maarten Bron, UL Transaction Security
- Stu Cox, Giesecke & Devrient
- David deKozan, Cubic Transportation Systems, Inc.
- Amol Deshmukh, Gemalto
- Jeff Fonseca, NXP Semiconductors
- Neil Hickey, Accenture
- Peter Ho, Wells Fargo
- Holger Kunkat, C-SAM
- Sadiq Mohammed, MasterCard Worldwide
- Howard Hall, Consult Hyperion
- Ivan Plajh, Smartrac N.V.
- Scott Rau, Chase
- JC Raynon, VeriFone
- Tony Sabetti, Isis
- Gerald Schoenecker, Ingenico
- Chandra Srivastava, Visa, Inc.
- Sridher Swaminathan, First Data Corporation
- Joe Tassone, Identiv

TOP CONTRIBUTORS
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- Sree Swaminathan, First Data Corporation
- Tom Zalewski, CorFire

HONOR ROLL
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- Maarten Bron, UL
- Peter Cattaneo, Intercede
- Greg Coogan, Morpho
- Stu Cox, Giesecke & Devrient
- David deKozan, Cubic Transportation Systems
- Mike English, Heartland Payment Systems
- Jeff Fonseca, NXP Semiconductors
- Gonda Lamberink, UL
- Pedro Martinez, Gemalto
- Sadiq Mohammed, MasterCard
- Akif Qazi, Discover Financial Services
- JC Raynon, VeriFone
- John Rego, OTI America
- Steve Rogers, IQ Devices
- Tony Sabetti, Softcard
- Gerald Schoenecker, Ingenico
- Chandra Srivastava, Visa, Inc.
- Lars Suneborn, Smart Card Alliance (formerly Identiv)
- Sridher Swaminathan, First Data Corporation
- Sastry Yeleswarapu, Capgemini
- Tom Zalewski, CorFire

2014 ACTIVITIES
- 2014 Payments Summit workshop, *The Changing U.S. Payments Landscape: The Impact of EMV and Mobile on the Payments Acceptance Infrastructure*, in collaboration with the Payments and Transportation Councils

- ISC West workshop, *Mobile Devices and Identity and Access Control Applications*, in collaboration with the Access Control and Identity Councils

- 2014 NFC Solutions Summit workshop, *NFC Mobile Security Approaches and Business Applications*

- *Bluetooth Low Energy (BLE) 101: A Technology Primer with Example Use Cases* white paper

- *Host Card Emulation (HCE) 101* white paper

- Completion of Council Steering Committee and officer elections

- Relationships with GlobalPlatform and NFC Forum

MOBILE AND NFC COUNCIL MEMBERS

3M Cogent, Inc. • ABnote • Accenture LLP • Advanced Card Systems Ltd. • Allegion • American Express • AT&T Mobility Services • Bank of America • Bell ID • BetterBuyDesign • Booz Allen Hamilton • Capgemini USA Inc. • CH2M HILL • Chase Card Services • Chase Paymentech • Clear2Pay • Consult Hyperion • CorFire • CPI Card Group • C-SAM • Cubic Transportation Systems, Inc. • Czech Technical University in Prague • Datacard Group • Datawatch Systems • DeviceFidelity, Inc. • Discover Financial Services • Eid Passport • ENTRUST • Exponent, Inc. • FIME • First Data Corporation • FIS • Fiserv • Gemalto • Giesecke & Devrient • Heartland Payment Systems • HID Global • HP Enterprise Services • Identification Technology Partners • Identiv • InComm • Infineon Technologies • Ingenico, North America • Initiative for Open Authentication • INSIDE Secure • Interac Association/Acxsys Corporation • Intercede Ltd. • IQ Devices • Lenel Systems International • MasterCard • Morpho • MTA New York City Transit • Natural Security • NBS Technologies • NXP Semiconductors • OTI America • Probaris, Inc. • Quantum Secure Inc. • SecureKey Technologies • Smartrac N.V. • Softcard • STMicroelectronics • Thales • TSYS • Underwriter Laboratories (UL) • U.S. Department of Homeland Security • Valid USA • VeriFone • Visa Inc. • Vix Technology • Xerox • Wells Fargo

Industry Momentum Drives Increased Interest in Council

Significant developments in the mobile and payment industries have elevated the interest and participation in the Mobile and NFC Council to over 70 Smart Card Alliance organizations. The Council continues to pursue its goal of raising awareness of mobile and NFC technologies, specifically in the context of new industry developments and the potential benefits from these developments for member organizations.

So far, 2014 has seen some exciting developments in the mobile, NFC and payments space. Most notably, the long awaited arrival of NFC on the iPhone has given the NFC industry a much needed shot in the arm. Apple's introduction of iPhone 6 and iPhone 6 Plus, along with iOS8, has application developers excited about the potential to create a plethora of new applications on the iOS platform. Specifically, the combination of biometric identification via the fingerprint sensor and proximity tap via NFC has application developers thinking of uses cases that may have been limited in the past.

Another notable development was the introduction of Host Card Emulation (HCE) for the Android ecosystem. With HCE, applications running on the Android operating system can now directly receive NFC data. In the past all NFC traffic was directed to secure applications running on a secure element. Google's introduction of HCE has similarly generated a lot of excitement for Android application developers. Even organizations, especially in the financial and retail space, who have been struggling to create business agreements with secure element owners are closely evaluating HCE as a go-to-market approach.

These positive developments in the mobile industry will continue to drive strong debate and partnerships in the industry, and the Mobile and NFC Council has been busy facilitating some of these discussions. Earlier in the year the Council worked on two white papers. The first, "*Bluetooth Low Energy (BLE) 101: A Technology Primer with Example Use Cases*," focused on explaining BLE technology and the various use cases that could enhance the consumer experience. The second, titled "*Host Card Emulation (HCE) 101*,"

focused on explaining HCE and its implications from development and security perspectives. The participation and leadership from members in creating these white papers were extraordinary and as a result these white papers were very well received.

> As mobile acts as a foundational platform for numerous other technologies, the Council generates interesting cross-council discussions with the Payments, Transportation, Access Control and Identity Councils.

As mobile acts as a foundational platform for numerous other technologies, the Council generates interesting cross-council discussions with the Payments, Transportation, Access Control and Identity Councils. These cross-council discussions led to the following exciting joint workshops:

- 2014 Payments Summit workshop, *The Changing U.S. Payments Landscape: The Impact of EMV and Mobile on the Payments Acceptance Infrastructure*, in collaboration with the Payments & Transportation Councils (Feb 2014)
- ISC West workshop, Mobile Devices and Identity and Access Control Applications, in collaboration with the Access Control and Identity Councils (Apr 2014)
- NFC Solutions Summit workshop, NFC Mobile Security Approaches and Business Applications (June 2014)

The Mobile and NFC Council is getting ready for another year of exciting activities. A Council member survey generated more than 15 different ideas that members would like to see the Council work on. I am very excited to lead the council through these activities and I continue to solicit your participation to make this Council a success.

Thank you for all your support!

Sadiq Mohammed
Vice President, Emerging Payments
MasterCard

Bluetooth Low Energy 101 and Retail Use Cases

The evolution of mobile applications and mobile payments industries has been accompanied by the continual introduction of new technologies. Currently, two mobile technologies are attracting attention: host card emulation (HCE) with Near Field Communication (NFC) and Bluetooth® low energy (BLE).

BLE is a wireless computer network technology designed and marketed as Bluetooth Smart by the Bluetooth Special Interest Group (SIG). While originally intended for use in the healthcare, fitness, security, and home entertainment industries, BLE shows promise for geolocation and other functions in stadium, retail, restaurant, transit and other applications. In comparison with "classic" Bluetooth, BLE requires considerably less power and incurs lower costs while providing a similar or larger communication range.

Key features of BLE include:
- Three power consumption modes: ultra-low peak, average, and idle
- The ability to run for long periods with standard or coin-cell batteries
- Multi-vendor interoperability
- Enhanced range (vs. classic Bluetooth)
- A frequency-hopping capability that detects other devices in the spectrum and avoids the frequencies they are using
- A hands-free customer experience

BLE's proximity detection capability offers multiple advantages for retail use cases:
- Improved operational efficiency for targeted promotions and information, which reduces the cost of marketing and customer service
- A more positive customer engagement. Customers and prospects who receive the right content in the right place at the right time are far more likely to act
- The opportunity for managers to capture and analyze data on how customers behave and adjust digital content and the physical environment accordingly
- The opportunity for creating innovative check-out processes

RETAIL USE CASES FOR BLE

Retail merchants are exploring how they can best increase traffic to drive new revenue and build recurring business.

Using BLE to contact a consumer's phone when the consumer is close to a certain location can be useful for many types of businesses. BLE-enabled apps can react when a consumer approaches a business, product or area within a business to offer a variety of business-specific opportunities.

BLE can be used by retailers to provide advertising, offers, coupons, product information, and other services based on the consumer's location. BLE beacons can also help retailers track where consumers go (with or without consumer interaction), allowing the retailer to optimize merchandise placement.

For example, picture a consumer about to enter a department store. Before setting foot in the store, the consumer receives a coupon for items purchased in the past and advertisements for items the retailer believes the consumer may want to purchase. Noting that the coupon is for something needed, the consumer heads to that department to purchase the item. On the way, the consumer passes the shoe section, at which point a coupon is sent to the consumer's phone advertising a current special; being in a hurry, however, the consumer keeps walking. On the way to checkout, the consumer sees a set of glassware that would be nice for a dinner party planned for the weekend and picks up the glassware for purchase. After checking out, the store uses BLE to thank the consumer and includes an offer to join the store's loyalty program.

In this example, the merchant was able to use BLE to accomplish the following:
- Convert a coupon to a sale
- Expand the merchant's value in the eyes of the customer
- Offer a loyalty program that will increase customer visits and revenue from that consumer
- Evaluate where the customer went in the store and how long the consumer stayed in one place

CONCLUSIONS

BLE can serve both as a complement to and a replacement for a variety of wireless connectivity options, including NFC, WiFi, and bar code technologies. By combining cost-effective deployment of location-aware peripherals with a power-efficient, secure, and responsive communications protocol, the technology can facilitate the rapid exchange of information, including location and promotion data.

Operationally, environments such as event management facilities, retail, restaurants, and public transit can benefit from BLE's ability to facilitate frictionless engagement between the consumer's smartphone, the local terminal infrastructure, and cloud-based applications. Consumers and business operators can share valuable location data that can drive rewards, tailor offerings to be more customer centric, and enable more efficient operations and better customer service.

While there are a variety of security methodologies available to tailor security levels to the needs of the application, the nature of BLE with its long distance pairing creates opportunities for tracking of individuals, eavesdropping on transactions, spoofing of beacons, and monitoring of behavior. As security concerns are addressed, BLE may become a common and trusted transport layer for mobile marketing, mobile services, and, potentially, mobile payment.

Host Card Emulation (HCE) 101

Near Field Communication (NFC) is a short-range RF 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.

SE-ENABLED CARD EMULATION

With SE-enabled card emulation, the NFC controller routes communication from the contactless reader or POS terminal to the tamper-resistant SE. All NFC-enabled mobile devices implement the capability to allow SEs to:

1. Communicate with the NFC controller, and through it, with contactless readers to perform transactions.
2. Communicate with user-interfacing mobile applications running on the mobile device operating system.
3. Communicate over-the-air with the credential provisioning infrastructure.

Credentials are provisioned in the SE by the trusted service manager (TSM), requiring cooperation and integration among multiple entities. Credentials in an SE are stored in security domains that adhere to GlobalPlatform specifications. Each service provider or issuer is assigned a specific domain, and each domain is protected by cryptographic keys that protect it from any unauthorized access.

HOST CARD EMULATION

HCE introduces an option for the NFC controller to now route communication from the contactless reader to an HCE service on the mobile device's host CPU (which can be part of a mobile application with a user interface, such as a mobile wallet). The credentials used by this HCE service can be stored in the application itself, or they could be stored in other secure locations such as a TEE or an SE. While the HCE service could connect in real-time or at given intervals with a cloud-based server to retrieve credentials, real-time retrieval from the cloud is an unlikely option, as network latency may result in a poor user experience.

HCE AND SECURITY CONSIDERATIONS

HCE introduces certain new risks for NFC transactions.

Communication between the NFC controller and HCE-enabled app can be spied on by malware. Malware can attack the operating system, a risk which is exacerbated when the handset is compromised by exploiting, rooting or jailbreaking. The malware itself may also be able to exploit, root or jailbreak the device, or spoof the user into initiating such actions. In addition, denial of service attacks can take place if routing is changed by a malware application.

HCE implementations need to consider the security requirements for the applications and take risk mitigation approaches to bolster the security of HCE implementations. Approaches could include: white box cryptography; tamper proofed software; biometric factors; device identity; use of a trusted execution environment; encryption; tokenization; and/or use of the secure element.

CONCLUSIONS

Card emulation has been the most popular, but also the most controversial, mode for NFC applications, due to the need to access the SE that is owned and controlled by another party. HCE significantly changes card emulation implementation requirements and introduces new business considerations for service providers and issuers wishing to use their credentials for NFC use cases.

Along with the greater flexibility HCE offers for service providers and issuers, comes advantages and trade-offs to the traditional SE model and accompanying ecosystem. Some advantages include more direct control and fewer dependencies on other ecosystem players. Some disadvantages include a less secure implementation and, possibly, a degraded end user experience. The list of advantages and trade-offs will change as more HCE-based solutions are deployed and used in commercial practice.
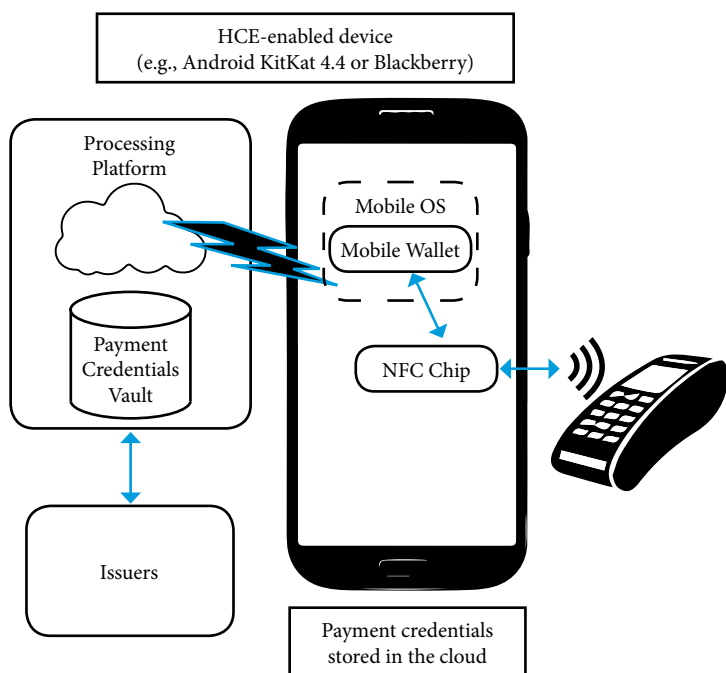
Obtaining Credentials from the Cloud Using HCE

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.

OFFICERS
- Chair: Open
- Vice Chair: David Batchelor, LifeMed ID, Inc.
- Secretary: Hugh Gilenson, ABnote

STEERING COMMITTEE
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- Anna Fernezian, CSC
- Hugh Gilenson, ABnote
- Jim Zalnasky, Oberthur Technologies

TOP CONTRIBUTORS
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- Daniel Panboon, LifeMed ID, Inc.
- Morgan Richard, XTec, Incorporated

HONOR ROLL
- David Batchelor, LifeMed ID, Inc.
- Michael Magrath, Gemalto
- Daniel Panboon, LifeMed ID, Inc.
- Morgan Richard, XTec, Incorporated
- Jim Zalnasky, Oberthur Technologies

2014 ACTIVITIES
- HIMSS 2014 pre-conference symposium, *Privacy and Security: Challenges and Opportunities in Healthcare Identity,* leadership and participation

- NAHAM 2014 panel, *Patient Access: Best Practices and Standards for Patient Authentication*

- *Patient Identity Perspectives*, white paper in process

- Participation in Workgroup for Electronic Data Interchange (WEDI) white paper project on smart card technology and biometrics

- Completion of Council Steering Committee and officer elections

- Relationships with Healthcare Information and Management Systems Society (HIMSS), Medical Identity Fraud Alliance (MIFA), National Association of Healthcare Access Management (NAHAM), Secure ID Coalition and WEDI

HEALTH AND HUMAN SERVICES COUNCIL MEMBERS

ABnote • Accenture • Advanced Card Systems Ltd. • Bell Identification B.V. • Booz Allen Hamilton • Clear2Pay • CSC • Datacard Group • Defense Manpower Data Center (DMDC) • Deloitte & Touche LLP • Diebold • Eid Passport Inc. • ENTRUST • Fiserv • Gemalto • Giesecke & Devrient • HP Enterprise Services • Ingenico, North America • Lenel Systems International • LifeMed ID, Inc. • MasterCard • NXP Semiconductors • Oberthur Technologies • OTI America • PPG Industries, Inc. • SAIC • STMicroelectronics • Thales • Tyco Software House • Valid USA • VeriFone • Xerox • XTec, Incorporated

Council Predicts High Smart Card Adoption Beyond Patient Identity

Smart cards have become necessary as the healthcare market wants a multi-purpose, secure and easily accepted credentialing token for identity, payment, and data storage for emergency situations, government compliance and population health. In 2014, the Health and Human Services Council educated stakeholders about the importance of preventing keystroke errors, misidentification and fraud, eliminating duplicate and overlay records, and increasing data, collections and billing accuracy by using smart card technology.

The Council has contributed to white papers and identified national conferences and panel opportunities to convey the significance of healthcare identity management to the government, public and private sectors. National associations and policy leaders are recognizing and speaking about the importance of using smart cards for credentialing providers and patients. In October, 2014, the Medical Identity Fraud Alliance (MIFA) asked Council members to speak about medical identity fraud management and protection through the use of mobile devices and smart cards. Smart card solutions are essential in automating secure and private identity authentication and data storage for all workflows including national disaster situations. The Pandemic and All Hazards Preparedness Act prompted the HHS Office of Assistant Secretary for Preparedness and Response to implement credentialing solutions that assist doctors and government officials. The ONC has also recognized the importance of universal patient identification and, in February 2014, published "Patient Identification and Matching Report," mentioning smart cards as a source for unique patient identifiers.

National public and private organizations are creating industry-leading standards and reports that distinguish smart cards as a preferred credentialing token due to their ability to increase patient safety and reduce administrative costs. In September 2014, a WEDI working group completed the "Subscriber Smart Card Research Paper" (which was pending WEDI approval as of this letter). The report concluded that smart cards offer significant potential to reduce identity theft, combat fraud, increase privacy, and improve patient matching in MPIs, health record reliability, evidence-based medicine, provider performance, public health, and research.

Credit cards are expected to be replaced in 2015 by EMV chip cards that contain smart card technology. This movement will replace magnetic stripe cards, which have proven to be vulnerable to fraud. Healthcare providers' offices will need to replace their POS systems with ones that accept EMV chip cards – providing the opportunity to leverage the new chip acceptance infrastructure for healthcare identity applications as well.

> Smart card solutions are essential in automating secure and private identity authentication and data storage for all workflows including national disaster situations.

To support the "Population Health" concept of improving the health and wellness of individuals through market acceptance and awareness, smart cards are beginning to be used in initiatives that pioneer care delivery nationwide to bridge government, providers, merchants, vendors and patients. A streamlined continuum of care optimizes efficiencies, increases health outcomes and improves economic stability. Communities have begun to envision programs and implement smart card technology to securely share and analyze data collected from healthcare facilities and merchants to encourage healthier living. In October 2014, Council members led the development of a Healthcare ID Security Track for the Smart Card Alliance 13th Annual Government Conference that brought together industry leaders speaking about smart card security and privacy measures that address all industry goals and demands.

Through our education programs that include event panels, webinars and other resources, the Council will continue to educate the nation on the importance of strong authentication using smart card technology. The Council also plans to define new projects to assist in leading the healthcare market evolution to more secure identity authentication technologies.

We look forward to another successful year for the Health and Human Services Council and would welcome new Alliance member participation in our activities.

David Batchelor
CEO, Chairman & Founder
LifeMed ID

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.

OFFICERS
- Chair: Bryan Ichikawa, Deloitte & Touche LLP
- Vice chair: Neville Pattinson, Gemalto
- Secretary: Salvatore D'Agostino, IDmachines

STEERING COMMITTEE
- Salvatore D'Agostino, IDmachines
- Francine Dubois, NagraID Security
- Frazier Evans, Booz Allen Hamilton
- Chris Gardner, SecureKey Technologies
- Bryan Ichikawa, Deloitte & Touche LLP
- Neville Pattinson, Gemalto
- Steve Rogers, IQ Devices
- Chris Williams, Leidos

2014 ACTIVITIES
- ISC West workshop, *Mobile Devices and Identity and Access Control Applications*, in collaboration with the Access Control and Mobile and NFC Councils

- Submission of comments to NIST on draft SP 800-157, in collaboration with the Access Control Council

- Submission of comments to NIST on draft SP 800-73-4, in collaboration with the Access Control Council

- Completion of Council Steering Committee and officer elections

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- Peter Cattaneo, Intercede
- Stu Cox, Giesecke & Devrient
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- Chris Edwards, Intercede
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IDENTITY COUNCIL MEMBERS

3M Cogent, Inc. • ABnote • Accenture • Advanced Card Systems Ltd. • Athena Smartcard Solutions Ltd. • Booz Allen Hamilton • CertiPath • CH2M HILL • Consult Hyperion • CPI Card Group • Cryptography Research, Inc. • CSC • Datacard Group • Defense Manpower Data Center • Deloitte & Touche LLP • Eid Passport Inc. • ENTRUST • Exponent • Fiserv • Gemalto • General Services Administration • Giesecke & Devrient • HID Global • HP Enterprise Services • Identification Technology Partners, Inc. • Identiv • IDmachines • Infineon Technologies • Initiative for Open Authentication • IQ Devices • Leidos, Inc. • Lenel Systems International • Multos International • NagraID Security • NIST • NXP Semiconductors • Probaris, Inc. • Quantum Secure Inc. • SAIC • SecureKey Technologies • Stanley Security Solutions • Tyco Software House • Ultra Electronics Card Systems • U.S. Department of Homeland Security • U.S. Department of State • Wells Fargo • Xerox • XTec, Incorporated

Authentication Was Focus for the Year

As a security practitioner looking over my shoulder at the year that just whizzed by, the trail is dotted with numerous instances of a common theme. Breaches. Federal and state governments, financial institutions, healthcare systems, retailers, airlines, restaurants, and countless others continually make the news as their systems fall prey to hackers and cybercriminals.

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.

> The authentication game is changing as we speak. The sheer volume and sophistication of the criminal element are truly impressive.

The use of a userid/password to gain access to your personal and privileged information is recognized as the weakest form of protection. Strong passwords are not the panacea to this growing issue; data breaches that steal one single userid/password can likely unlock many accounts as many users simply use the same ones in multiple places. It makes no difference that your password is strong and overly complicated because that's not where the vulnerabilities normally lie.

The National Strategy for Trusted Identities in Cyberspace (NSTIC) was established in 2011 and charts a course for a public/private collaboration to raise the trust levels for identities involved with online transactions. A third round of grants extends the pilot population by three, and extends the breadth of capabilities embracing the NSTIC guiding principles. At the ninth plenary meeting last June, Special Assistant to the President and White House Cybersecurity Coordinator Michael Daniel said, "…one of my key goals in my job that I would really love to be able to do is to kill the password dead."

Strong authentication techniques and technologies are becoming more prevalent. One sector where this is very apparent is the financial sector. Many banking institutions have deployed a variety of methods that help increase the security for both accessing account data and performing online transactions. Protecting users from entering password data into illicit sites by first verifying a shared secret is one method that is commonly deployed. Multi-factor authentication using random one-time password generator technologies is another tool commonly used. And by October 2015, the EMV standard should be widely deployed in the United States, enabling stronger authentication for credit and debit card transactions at retail locations, and making it much more difficult to clone or counterfeit bank cards.

The authentication game is changing as we speak. The sheer volume and sophistication of the criminal element are truly impressive. Attack vectors are no longer single threaded and they represent new levels of complexity that are extremely difficult to combat. Operation Emmental, named after the Swiss cheese due to the predominant target being Swiss banks, successfully bypassed a mobile operating-based two factor authentication system. Already, two-factor authentication by itself is no longer sufficient. Newer, stronger, cryptographic solutions are coming, and strong device binding and mobile out-of-band authentication are capabilities that can help raise the bar significantly.

In 2013, as we looked forward to 2014, we discussed the notion of how identity assurance would grow in both concept and practice, and it has. We also discussed how strong authentication and appropriate authorization across different use cases would start to become subjects of interest, and they have. Now, as we look forward to 2015, we can expect that the number and severity of breaches will not subside; rather they will increase for a period of time. The criminal element is not sleeping and is increasingly pervasive across all industries in their persistence and perseverance. Authentication – strong, cryptographic, multi-factor – call it what you will, we need more of it. And it needs to be better than it is today.

Bryan K. Ichikawa
Senior Manager
Deloitte & Touche LLP

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, and Oliver Manahan, MasterCard
- Vice chair: Troy Bernard, Discover Financial Services
- Secretary: Deborah Baxley, Capgemini

STEERING COMMITTEE

- Philip Andreae, Oberthur Technologies
- Deborah Baxley, Capgemini
- Troy Bernard, Discover Financial Services
- Deana Cook, Chase Card Services
- Jose Correa, NXP Semiconductors
- Terry Dooley, SHAZAM
- Michael English, Heartland Payment Systems
- Greg Garback, WMATA
- Simon Hurry, Visa, Inc.
- Jack Jania, Gemalto
- Bastian Knoppers, FIS
- Oliver Manahan, MasterCard Worldwide
- Arnaud Moser, Infineon Technologies
- Nick Pisarev, G&D
- JC Raynon, VeriFone Systems
- John Smith, First Data Corporation

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- Jose Correa, NXP Semiconductors
- Mike English, Heartland Payment Systems

HONOR ROLL

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- Deborah Baxley, Capgemini
- Louis Bianchin, Valid USA
- Brent Bowen, Valid USA
- Deana Cook, Chase Card Services
- Jose Correa, NXP Semiconductors
- Terry Dooley, SHAZAM
- Mike English, Heartland Payment Systems
- Allen Friedman, Ingenico
- Sarah Hartman, TSYS
- Jack Jania, Gemalto
- Christine Lopez, Vantiv
- Oliver Manahan, MasterCard
- Nick Pisarev, Giesecke & Devrient
- Joe Scott, Visa, Inc.
- John Smith, First Data Corporation
- Brian Stein, CH2M Hill
- Sree Swaminathan, First Data Corporation

2014 ACTIVITIES

- 2014 Payments Summit workshop, *The Changing U.S. Payments Landscape: The Impact of EMV and Mobile on the Payments Acceptance Infrastructure*, in collaboration with the Mobile and NFC and Transportation Councils

- *Card-Not-Present Fraud: A Primer on Trends and Transaction Authentication Processes* white paper

- *Technologies for Payment Fraud Prevention: EMV, Encryption and Tokenization* white paper

- *True Cost of Data Breaches in the Payments Industry* white paper, project in process

- *EMV and Data Breaches: The Role of EMV Technology in Mitigating Card Payments Fraud* white paper, project in process

- Completion of Council Steering Committee and officer elections

- Relationships with EMV Migration Forum

PAYMENTS COUNCIL MEMBERS

ABnote • Accenture • American Express • Apriva • Bell Identification B.V. • Blackboard Inc. • Booz Allen Hamilton • Capgemini USA Inc. • CH2M HILL • Chase Card Services • Clear2Pay • CorFire • CPI Card Group • CSC • Cubic Transportation Systems, Inc. • Datacard Group • DeviceFidelity, Inc. • Discover Financial Services • Double Diamond Group • Exponent • First Data Corporation • FIS • Fiserv • Gemalto • Giesecke & Devrient • Heartland Payment Systems • Identiv • InComm • Infineon Technologies • Ingenico, North America • Initiative for Open Authentication • INSIDE Secure • Interac Association / Acxsys Corporation • JCB International Credit Card Co., Ltd. • Lenel Systems International • MasterCard Worldwide • Morpho • MTA New York City Transit • Multos International • NACHA -- The Electronic Payment Association • NagraID Security • NXP Semiconductors • Oberthur Technologies • OTI America • Ready Credit Corporation • SHAZAM • STMicroelectronics • Thales • TSYS • Tyfone • Underwriter Laboratories (UL) • United Services Automobile Association (USAA) • Valid USA • Vantiv • VeriFone • Visa, Inc. • Vix Technology • Washington Metropolitan Area Transit Authority (WMATA) • Wells Fargo • Xerox

Council Efforts Focus on Securing Entire Payments Ecosystem

Change has continued for the U.S. payments ecosystem in 2014, and most of it has been positive and exciting – from the accelerating adoption of EMV chip payments to the growth of mobile and NFC payments and open transit payments. Some of the changes have not been as positive, such as the troubling and increasing instances of data breaches at major retailers that have received widespread media coverage and uncovered security vulnerabilities in our payment systems. These breaches were a catalyst for Payments Council activities this year, which focused on providing educational resources on the ways to more thoroughly and effectively secure the entire payments infrastructure.

The first step in the Council's initiatives was to continue our educational efforts on the ongoing migration to EMV in the U.S., and the impact of chip card-based technologies and processes to help mitigate card-based fraud losses and promote global payments interoperability. For many years, the Payments Council has provided this education through webinars, white papers and FAQs. In 2014, the Council members contributed to strong educational sessions on EMV at the 2014 Smart Card Alliance Payments Summit, and worked collaboratively with the EMV Migration Forum to help accelerate EMV adoption in the U.S.

The next step was to provide education on securing the card-not-present (CNP) channel during the migration to EMV. As we know, criminals will go after the weakest link in the chain. As a result, some countries that have implemented EMV chip payments have reported fraudsters shifting their attention away from the physical POS to e-commerce channels where it can be easier to make fraudulent purchases.

In order to provide education on how the U.S. payments industry can proactively strengthen the security of CNP channels while simultaneously migrating to higher levels of security in-store with EMV chip technology, the Payments Council published the white paper "*Card-Not-Present Fraud: A Primer on Trends and Transaction Authentication Processes*." We recommend the white paper as a great resource on fraud trends and on how to add essential security for CNP transactions.

> The Council continued our ongoing educational efforts on the U.S. EMV migration and the impact of chip card-based technologies and processes to help mitigate fraud losses and promote global payments interoperability.

The third step in the Council's educational efforts on securing the payments ecosystem was through the recently-published white paper, "*Technologies for Payment Fraud Prevention: EMV, Encryption and Tokenization*." This white paper examines EMV, end-to-end encryption (E2EE) or point-to-point encryption (P2PE), and tokenization, and discusses how, when implemented together, they can secure the payments infrastructure and prevent payment fraud.

The white paper details how the three technologies can provide a layered and effective security approach for any business that processes credit and debit card payments, and offers considerations for implementation. The white paper was viewed as a major contribution to the payments industry and a valuable tool for U.S. merchants.

In 2015, the Payments Council will continue to be the industry's leading educator and resource as we make even bigger strides forward in payments. We look forward to working together and alongside our fellow Councils and the EMV Migration Forum to provide educational materials to help ensure the successful move towards more secure, convenient and innovative payments technologies.

It is a great privilege to serve as Co-Chairs of the Payments Council, and we thank all of our Council participants for their valuable contributions throughout this year and every year.

Jack Jania
Senior Vice President of Strategic Partnerships
Gemalto

Oliver Manahan
Vice President of Emerging Payments
MasterCard Worldwide

Card-Not-Present Fraud: A Primer on Authentication Methods for e-Commerce Transactions

Card-not-present (CNP) fraud involves the unauthorized use of a credit or debit card number to purchase products or services in a setting where the customer and merchant are not interacting face-to-face. This can be in an Internet (or e-commerce) transaction from either a computer or a mobile device, or a transaction that takes place over the telephone or through mail order.

There are three important areas to consider when discussing CNP fraud and consumer authentication.

First is the growth in e-commerce, which is projected to be a growing fraction of total retail transactions.

Second, payment account information that is stolen in data breaches is sold to fraudsters and used to either create counterfeit cards or conduct e-commerce transactions.

Third, addressing CNP fraud risk is an important topic as the U.S. moves to EMV chip payments at the physical point-of-sale (POS) to address the growing problem of counterfeit fraud. EMV has been proven effective at reducing counterfeit card fraud globally. Experience in other countries, however, has also found that as counterfeit card fraud declines, fraudsters move to other channels, such as e-commerce, and CNP fraud increases as a proportion of total fraud.

AUTHENTICATION FOR CNP TRANSACTIONS

The challenge with CNP transactions is authenticating that the purchaser is who they say they are and is the true account holder. In a face-to-face transaction at the POS, a cardholder uses a card (something owned) and, if prompted, a personal identification number (PIN, something known) or a signature (a biometric), providing two-factor authentication. This process for authenticating cardholder identity isn't replicated for e-commerce transactions.

E-commerce retailers and the payments industry currently take a variety of approaches to authenticate consumers. Some general classes of approaches include static or random passwords, dynamic information such as one-time passwords generated in software or using a smart card or mobile phone, knowledge-based approaches (such as asking secret questions), and device fingerprinting, where some information is used to identify the device by which the user is accessing an e-commerce site.

The payments industry has implemented a number of standard approaches for CNP authentication. Asking for the cardholder's zip code to do address verification and entering the "card security code" printed on the card are common methods used by many, but not all, merchants. Card issuers validate that this information

is correct during the transaction authorization. The payments networks' 3D Secure software protocol is also used by merchants and issuers to validate cardholder identity during an e-commerce transaction.

E-commerce retailers typically implement multiple solutions to mitigate CNP fraud or use a commercial service to mitigate transaction risk. Since merchants today assume the costs of CNP fraud as well as typically pay higher fees for e-commerce transactions, merchants may have their own internal fraud departments and often use tools to score the risk of online shopping behavior to determine which online purchases to accept, reject or send for review.

Ultimately, e-commerce retailers have to balance the risk of losses due to fraud with making the purchase process more difficult for the consumer. The more difficult it is for the consumer to purchase online, the more likely they'll abandon the transaction – leading to lost revenue. So each e-commerce merchant will take different approaches based on its transaction volume and potential for fraud.

CONCLUSION

Mitigating an increase in CNP fraud requires devising and implementing solutions for authenticating customers in CNP scenarios. Different solutions are currently available in the marketplace; most rely on the use of a common set of authentication building blocks to get the job done. To date, merchants have chosen which solution to implement because they have assumed the risk of losses due to fraud and abandoned purchases. The approach taken by merchants varies by merchant size and customer/traffic profile.

Because issuers have not been liable for CNP fraud, it is understandable that their role in preventing it has been fairly limited. Issuers can choose to participate in emerging processes for standardizing CNP authentication across merchants. Doing so will provide consumers with a more trouble-free experience when shopping virtually.

With the U.S. migration to EMV addressing counterfeit card fraud, it's critically important that the industry take proactive steps to deal with the potential increase in CNP fraud, especially as new and large data breaches continue to compromise cardholder information. Identifying best practice strategies for merchants, evaluating industry-wide approaches that deal with risk at the payments system level, and engaging issuers in the fraud mitigation process are critical. Important factors for success will be not only effectiveness in reducing CNP fraud, but also ease of merchant implementation and customer ease of use.

Technologies for Payment Fraud Prevention: EMV, Encryption and Tokenization

Implementing EMV, encryption and tokenization provides a better solution for payments security than any single technology used by itself.

To understand how EMV, encryption and tokenization work together to provide transaction security, it is helpful to consider card-present, card-not-present (CNP) and mobile transaction use cases for customers presenting payment credentials to merchants.

CARD-PRESENT TRANSACTIONS

EMV was designed to combat counterfeit card fraud in a card-present environment. Key EMV security features include:

- Card authentication using dynamic authentication data, which proves that a card is authentic
- EMV chip transaction data, which cannot be used to create counterfeit magnetic stripe cards
- Potential use of a PIN, providing stronger verification of cardholder identity and addressing lost and stolen card fraud.

EMV + Encryption

Card-Present

PIN can be used to verify the card member

EMV Device

ENCRYPTION*

Cryptogram is passed to issuer for validation
Card is authenticated by the issuer

Card is authenticated offline by the terminal

Terminal

Merchant   Acquirer   Payment Network   Issuer

EMV + Tokenization + Encryption

Device containing a token

ENCRYPTION*

Cryptogram is passed to issuer for validation
Token replaces actual account number

Token Service Provider

Tokenization + Encryption

eCommerce token

Card-Not-Present

* Data at rest or in transit is protected by E2EE or P2PE

Role of EMV, Encryption and Tokenization in the Payment Ecosystem

Encryption can protect transaction data at rest and in transit, whether it's a magnetic stripe or EMV chip transaction. The combination of EMV and encryption protects transactions in the card-present environment. Merchants can implement this two-layered approach to protect their card acceptance environment from becoming a source of fraudulent transactions.

Tokenization may also be implemented in card-present environments to secure data-at-rest. For example, merchants may store tokens to identify consumer transactions, simplifying the return experience without needing to store encrypted account data.

EMV tokens on a mobile device can also be used in the card-present environment. When the consumer uses a device with EMV credentials stored in a secure element and accessed through a mobile wallet, the transaction would be a card-present EMV trans-

action. As with the other card-present use cases, EMV protects against counterfeit credentials and provides credential authentication. The merchant may also use encryption and/or tokenization to protect the transaction information while at rest or in transit.

CNP TRANSACTIONS

CNP transactions occur when the customer and merchant are not interacting face-to-face. In the CNP environment, security approaches should consider:

- Some form of cardholder authentication, such as 3D Secure
- Encryption to protect data-in-transit and data-at-rest
- Tokenization to protect data

MOBILE TRANSACTIONS WITH CREDENTIALS STORED IN THE CLOUD
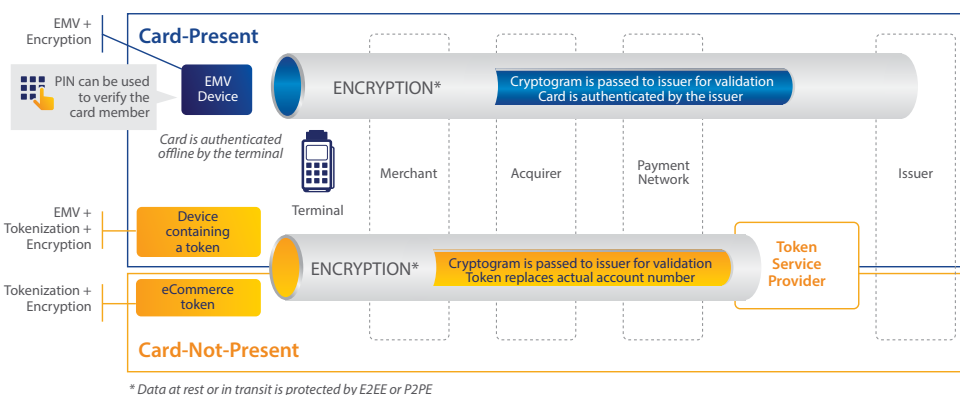
Mobile payment solutions that store payment credentials in the cloud but present them in a face-to-face environment are now typically considered CNP transactions. The industry has launched a number of initiatives to develop specifications for tokenized credentials that can be used for mobile commerce transactions.

SUMMARY

By implementing a layered approach using all three technologies together (as shown in the figure), the industry can significantly improve payment transaction protection.

Key guiding principles for the layered security approach are:

- Continued migration away from transactions based on static authentication by implementing EMV for the card-present environment
- Protection of data-at-rest and data-in-transit, for both card-present and CNP environments
- Adoption of encryption and tokenization technologies to protect sensitive data, for both card-present and CNP environments
- Adoption of cardholder authentication for the card-not-present environment

No silver bullet is available to stop fraud. However, a layered security method that includes EMV, tokenization, and encryption is the right approach for securing payment card transactions.

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
- Chair - Gerald Kane, Southeastern Pennsylvania Transportation Authority (SEPTA)
- Vice chair, transit - Open
- Vice chair, tolling - Mike Nash, Xerox
- Vice chair, parking - Steven Grant, LTK Engineering Services

STEERING COMMITTEE
- Julie Green, LTK Engineering Services
- Linh Huynh, INSIDE Secure
- Kathy Imperatore, PATCO
- Jennifer Dogin, MasterCard Worldwide
- Celine Mantoux, Giesecke & Devrient
- Kenneth Mealey, American Express
- Pradap Mistry, Cubic Transportation Systems
- Eric Reese, Chicago Transit Authority
- Craig Roberts, Incomm
- Eric Schindewolf, Visa, Inc.
- John Vasilj, Accenture

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- Mike Dinning, U.S. Department of Transportation / Volpe Center
- Steven Grant, LTK Engineering Services
- Jerry Kane, Southeastern Pennsylvania Transportation Authority (SEPTA)
- Amy Linden, MTA New York City Transit
- Mark Lulic, MasterCard
- Jane Matsumoto, Accenture
- Mike Nash, Xerox
- Polly Okunieff, Xerox
- Pawel Politewicz, Discover Financial Services

- Craig Roberts, Incomm
- Eric Schindewolf, Visa, Inc.
- Brian Stein, CH2M Hill
- Katina Vaughan, Dallas Area Rapid Transit (DART)

2014 ACTIVITIES
- 2014 Payments Summit workshop, *The Changing U.S. Payments Landscape: The Impact of EMV and Mobile on the Payments Acceptance Infrastructure*, in collaboration with the Mobile and NFC and Payments Council

- *U.S. EMV Migration Impacts on Parking*, white paper in process, discussing guidelines on timeline and impact of EMV on the U.S. parking industry

- *U.S. Migration to EMV and the Challenges for U.S. Public Transit Agencies,* white paper in process, identifying the specific areas of U.S. EMV migration impact on transit and providing an informed starting point for discussions among industry stakeholders

- *Transit Industry and Payment Brands* project in process, discussing topics to enhance the cross-industry dialog and focusing on transit industry acceptance of contactless open loop payment cards

- Projects being defined: educational workshop on open payments in transit; white paper on reference enterprise architecture on transit open payment system white paper; project on multi-modal convergence of transportation payment systems and travel information

- Completion of Council Steering Committee and officer elections

- Relationship with EMV Migration Forum

TRANSPORTATION COUNCIL MEMBERS

ABnote • Accenture • Advanced Card Systems Ltd. • American Express • Bank of America • Bell Identification B.V. • Blackboard Inc. • Booz Allen Hamilton • Capgemini USA Inc. • CH2M HILL • Chase Card Services • Chicago Transit Authority • Clear2Pay • Consult Hyperion • C-SAM • CSC • Cubic Transportation Systems • Dallas Area Rapid Transit (DART) • Deloitte & Touche LLP • DeviceFidelity, Inc. • Discover Financial Services • Double Diamond Group • FIME • First Data Corporation • Gemalto • Giesecke & Devrient • Heartland Payment Systems • Identification Technology Partners • Identiv • IDmachines • InComm • Infineon Technologies • INIT Innovations in Transportation • INSIDE Secure • Intelligent Parking Concepts LLC • Interac Association/Acxsys Corporation • Invoke Technologies • LTK Engineering Services • MasterCard • Metropolitan Transportation Commission • Morpho • MTA New York City Transit • NXP Semiconductors • Oberthur Technologies • OTI America • Port Authority of NY/NJ • Port Authority Transit Corporation (PATCO) • Ready Credit Corporation • Regional Transportation Authority • San Francisco Bay Area Rapid Transit District • Scheidt & Bachmann • Smartrac N.V. • Softcard • Southeastern Pennsylvania Transportation Authority (SEPTA) • STMicroelectronics • Thales • TransitCenter • Underwriters Laboratories (UL) • U.S. Department of Transportation/Volpe Center • Utah Transit Authority • Valid USA • Vantiv • VeriFone • Visa, Inc. • Vix Technology • Washington Metropolitan Area Transit Authority (WMATA) • Xerox • XTec, Incorporated

Initiatives Saw Positive Response from Commuters

Transportation payment innovations continued throughout 2014, led by Transport for London's (TfL) acceptance of bank-issued cards for the London Underground and commuter rail. Following on the heels of open payment on London buses in 2012, TfL became one of the largest transit systems on the globe to accept payment cards at the point of entry. The total number of journeys on tube and rail services in London reached over 375,000 and the total number of journeys on London buses and trams since contactless payments is over 785,000, according to 2014 figures from TfL, the local government organization responsible for most aspects of London's transport system.

> Like all merchants nationwide, the transportation industry must evaluate the benefits, costs and timing of legacy system upgrades to accept EMV chip cards, or assume risk liability of foregoing the investment.

Closer to home, Salt Lake City and Chicago both represented early adopters of fare payment with bank cards, offering riders numerous choices to pay fares; several agencies were either in the early design or implementation stage of open payment projects, including Washington, D.C. (WMATA), Philadelphia (SEPTA), and New York City (NY MTA).

This past year also saw expanded use of mobile ticketing. In Texas, Dallas (DART), Fort Worth and Denton County Transit have all launched mobile ticketing applications and reported positive acceptance by riders; likewise, NJ Transit, Boston's MBTA and New York's Long Island Railway introduced mobile ticketing and witnessed widespread customer satisfaction. Nationwide, numerous agencies are in the process of issuing proposals for mobile ticketing projects or are deploying, such as Virginia Railway Express.

Within the Transportation Council, EMV migration continued to represent the primary topic for work activities across three projects. Two initiatives were carried over from last year, the first of which was the white paper on transit industry's challenges to meet the EMV requirements. The paper frames the key issues facing the U.S. transit industry as it prepares for EMV chip card acceptance. Like all merchants nationwide, the industry must evaluate the benefits, costs and timing of legacy system upgrades to accept EMV chip cards, or assume risk liability of foregoing the investment. A second project addressed the transit industry's adoption of open payments and its evolving role as a merchant. A third project underway this year centered on the parking industry and discusses the challenges it faces with the advent of EMV. The parking industry estimates its annual revenue to hover between $35 and $40 billion with operations divided between the public and private sector. The paper seeks to create an industry strategy to navigate the EMV landscape by focusing on the various stakeholders in the parking ecosystem, examining issues such as the EMV terminal and card interface options, and identifying industries with commonalities of interest and potential for alliances with industry associations.

Multimodal payments continued to gain traction in the transportation industry in 2014 and included the following noteworthy events:

- The Express Lanes demonstration project in Los Angeles, which linked transit and toll payments, was adopted as a permanent program and is expected to expand to other corridors;
- The U.S. Department of Transportation will sponsor of a proof-of-concept demonstration of linked transportation payment accounts in 2015; and
- The Intelligent Transportation Systems Committee of the International Standards Organization has initiated an activity to explore a multimodal payment standard.

The Transportation Council activities for multimodal payment convergence include planning for a workshop in the Washington, D.C. area in early 2015 and will include the topic in the 2015 Payments Summit agenda.

A special thanks to all Council members for their participation, contributions, and hard work during the year. With the great help of the Smart Card Alliance staff we look forward to a productive year in 2015.

Gerald Kane
Senior Project Planner
New Payment Technologies
SEPTA

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 170 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 (2013-2014)
John Drechny, Walmart (Chair)
Dan Heimann, ACI Worldwide (Vice Chair – until October 2014)
Patty Walters, Vantiv (Secretary)
Laura Ermer, McDonald's (Treasurer – until June 2014)

STEERING COMMITTEE MEMBERS (2013-2014)
Carolyn Balfany, MasterCard Worldwide
Dave Burkhart, McDonald's (effective June 2014)
Kristy Cook, Target
Chris Coward, Publix Super Markets
Karen Czack, American Express
Sarah Hartman, TSYS
Simon Hurry, Visa, Inc.
Dianne Johnson, ACI Worldwide (effective October 2014)
Jesse Lee, Wells Fargo
Nancy Loomis, First Data/STAR
Timothy Ludwig, JPMorgan Chase
Andrew Paur, Woodforest National Bank
Nick Pisarev, Giesecke & Devrient
Emily Santos, SunTrust
Elinor Smith, Discover Financial Services
Robin Trickel, Heartland Payment Systems
Bob Woodbury, FIS/NYCE
Brian Ziff-Levine, Navy Federal Credit Union

Cooperation and a Shared Sense of Purpose

This past September the EMV Migration Forum celebrated its second anniversary as the principal organization supporting the U.S. migration to EMV chip technology with a two-day member meeting at McDonald's headquarters near Chicago. The Forum has grown up quickly since its first informal meeting of payments stakeholders at MasterCard's headquarters in Purchase, NY, in 2012. From those early discussions it became obvious that the organization had to address complex issues that required broad cooperation and coordination among groups on different sides of the payments market, namely the four payments brands, major card issuers, merchants, and the payments processors.

> The most complex and important issue the Forum took on in 2014 had to do with EMV debit cards and the Federal Reserve's rulemaking decisions on the Durbin Amendment.

The most complex and important issue the Forum took on in 2014 had to do with EMV debit cards and the Federal Reserve's rulemaking decisions on the Durbin Amendment. A federal judge ruled that the Fed had erred in its interpretation of the law and made changes to the regulations in place for routing debit transactions. This created considerable friction among the regional debit networks and the national debit networks and threatened to derail the timelines for the migration. In the midst of these debates the Target data breach and several subsequent breaches raised the awareness of why EMV was urgently needed. After months of tense discussions and negotiations helped along by the threat of further breaches and a successful appeal of the judge's earlier ruling, the industry leaders resolved the issues and EMV migration began making progress again.

The EMV Migration Forum – a separate organization that is affiliated with the Smart Card Alliance – has been a unifying force for addressing complex EMV issues because it has representatives from all industry stakeholder groups – payment brands, issuers, acquirer processors, merchants, debit networks, and industry suppliers. The six Working Committees and two Special Interest Groups work on the projects needed to educate and get consensus among the industry representatives, producing sought-after white papers and hosting webinars and educational sessions. Strategic public relations efforts also raised the awareness of the Forum and the importance of the work being done.

To foster better communications about what was happening within the Working Committees and the Forum, we implemented an ambitious communications program. We launched a Forum member bulletin, and to ensure that all Forum members were aware of the most recent industry happenings, we distribute a weekly news digest linking to topical news and articles. Along with the help of the Communications and Education Working Committees, we posted industry resources, prepared EMV FAQs, created an online press resource room, and introduced the Knowledge Center on the EMV Connection web site.

In 2014, Forum members met quarterly in two-day all-member meetings. First-time attendees mixed with "regulars" at these meetings, sharing information, exchanging ideas, collaborating on projects and discussing new challenges. After each conference the industry became more energized about the spirit and level of cooperation among members in their mission to introduce EMV to the United States.

Central among these activities is our mission: to address issues that require broad cooperation and coordination across many constituents in the payments space to ensure the successful adoption of EMV-enabled cards, devices, and terminals across the U.S. market. In the past year, that mission has been tested and the EMV migration Forum has proven to be capable and competent at aligning the disparate business interests and technical requirements to keep the migration to EMV moving forward and reaching the targeted goals for adoption set for late 2015.

Thank you to everyone who played a role in the Forum this year; we appreciate your support and look forward to working together towards new goals in 2015.

Randy Vanderhoof
Director
EMV Migration Forum

EMV Migration Forum Membership: 170 Members

7-Eleven, Inc.
ABnote North America
Acculynk
ACI Worldwide
Aconite Technology Ltd.
Acquirer Systems
Alaric NCR
Alliance Data
AM World Solutions
American Express
Apriva
Argotechno
Arroweye Solutions, Inc.
Ascert, LLC
ATM Industry Association
Attra Infotech Private Limited
B2 Payment Solutions Inc.
Bank of America
Bank of the West
Bank Solutions Group
BankUnited
Barclaycard US
Barnes International Limited
Bell ID
BetterBuyDesign
BMO Harris Bank N.A.
BP Products NA
BPC Banking Technologies
Branch Banking & Trust
    Company (BB&T)
Capital One
Card Services for Credit
    Unions (CSCU)
CardConnect
Cardtek USA
Cardtronics USA
Catalyst Card Company
CETECOM INC.
Chevron
CITGO Petroleum
    Corporation
Citibank
City National Bank
Clear2Pay
Clicks & Mortar Consulting,
    Inc.
CMS Payments Intelligence
Cognizant Technology
    Solutions
Columbus Data Services

Computer Services, Inc.
Consult Hyperion (Hyperion
    Systems Ltd.)
CPI Card Group
Credit Union 24 Network
CreditCall Corporation
Cryptomathic Inc.
Cubic Transportation
    Systems, Inc.
Datacard Group
Debit Network Alliance
Diebold Incorporated
Discover Financial Services
E Chip LLC
E&S Consulting LLC
EFT Source, Inc.
Elan Financial Services
Elavon, Inc.
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    Association
Electronic Transaction
    Association
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Euro Tech Sales LLC
Federal Reserve Bank of
    Minneapolis
Fifth Third Bank
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HP Atalla Data Security
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InfoGard Laboratories
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IntelCav
Intelligent Parking Concepts
    LLC

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    Solutions
JCB International Credit
    Card Company
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    Plan, Inc.
Kohl's Department Stores,
    Inc.
KONA I co. Ltd.
Lowe's
Macy's Credit and Customer
    Services
Magellan Consulting Inc.
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NCR
NCR Retalix
NXP Semiconductors
Oberthur Technologies
Opus Software Solutions, Inc.
Paragon Application Systems
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Phoenix Interactive Design,
    Inc.
PNC Bank
PSCU
Publix Super Markets Inc.
Q-Card Company/Brush
    Industries
RBS Citizens Financial Group
Regions Bank
Safeway Inc.
Savage Consulting Group
SCIL EMV Academy, Inc.
Sears Holdings Corporation
ServiRed S.A.

SHAZAM
Shift4 Corporation
Smartrac Technology Group
Softcard
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State Farm Bank
Sterling Payment
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Visa, Inc.
W. Capra Consulting Group
Wakefern Food Corp
Walgreen Co.
Walmart
Wells Fargo
Whole Foods Market, Inc.
Woodforest National Bank
WorldPay US
Xerox

As of November 7, 2014

EMV Migration Forum Working Committees

The EMV Migration Forum has six 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 Migration 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.

More than 400 EMV Migration Forum members participate in the working committees, with each committee including participants from all stakeholder categories. Members have had a busy year, producing white papers, surveys, internal discussion documents, process flows, and publications for the industry.

- **ATM Working Committee**, led by Stuart Mackinnon, Columbus Data Services, Ron Schnittman, Bank of America, and David Tente, ATM Industry Association

  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. Recent projects include completing and publishing the highly regarded "*Implementing EMV at the ATM*" white paper and a soon-to-come appendix to the white paper, "PIN Change at the ATM."

- **Card-Not-Present (CNP) Fraud Working Committee,** led by Dennis Gamiello, MasterCard, Joe Vasterling, Target, and Sheryl York, Litle & Co.

  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. Currently, the Working Committee is focused on the development of an industry best practices white paper based on the analyses of comprehensive fraud tool and authentication method assessments completed in late 2013/early 2014.

More than 400 EMV Migration Forum members participate in the working committees, with each committee including participants from all stakeholder categories.

EMV Migration Forum Membership Mix
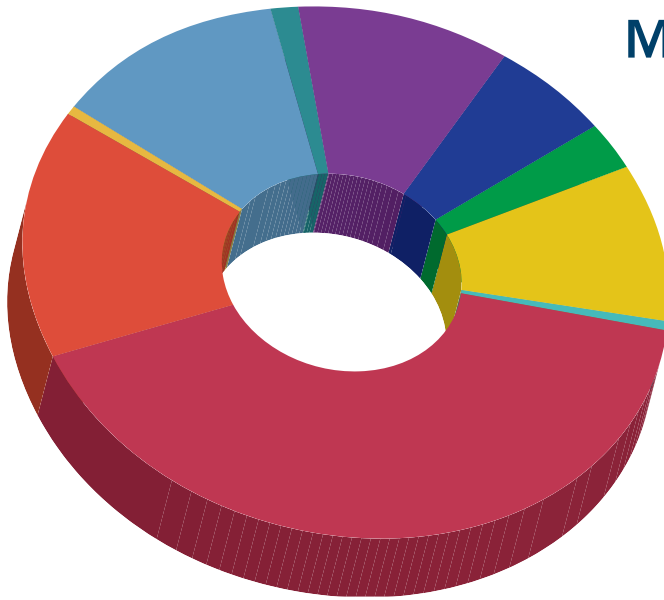
18	ACQUIRER/PROCESSOR
10	ASSOCIATION
5	GLOBAL BRANDS
16	CONSULTANT/INTEGRATOR
1	GOVERNMENT
70	INDUSTRY
26	ISSUERS
1	MOBILE
21	MERCHANTS
2	REGIONAL NETWORKS

170 TOTAL MEMBERS

- **Communication and Education Working Committee**, led by Diane Jackson, CPI Card Group, Mansour Karimzadeh, SCIL, and Cindy Knowles, FIS

  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 the successful delivery of the *Effective Communication Practices for U.S. Chip Migration* webinar, the launch of the *EMV Migration Forum Knowledge Center* and more recently, the introduction of the Online Card Authentication Animation which is currently underway.

- **Debit and EMV Working Committee**, led by Oliver Manahan, MasterCard, and Emily Santos, SunTrust

  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 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. Earlier this year, the Working Committee met its chartered objective by publishing the *U.S. Debit EMV Technical Proposal* which sets forth a functional description of a possible approach for a technical solution for U.S. debit routing.

- **Testing and Certification Working Committee**, led by Randy Burnette, VeriFone, and Cindy Kohler, Visa

  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. The Committee recently organized and conducted a training workshop focused on development and implementation best practices for testing and certification of EMV payment applications; the training was aimed specifically at value-added resellers (VARs), independent software vendors (ISVs), and independent service organizations (ISOs).

- **U.S. Coordination Working Committee**, led by Dan Jovanovic, City National Bank, and Jan McGrath, MasterCard

  The U.S. 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. The Committee is currently focused on coordinating efforts with other, ongoing EMV migration trial or launch initiatives.

SPECIAL INTEREST GROUPS

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

SIGs meet at EMV Migration Forum in-person meetings and gather members into "birds-of-a-feather" sessions to discuss topics relevant to SIG participants.

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

The Smart Card Alliance Latin America & the Caribbean chapter aimed to promote the interoperability, understanding, convergence, and widespread innovation of applications of integrated circuit card technology in the region.

Since then, through specific initiatives such as education programs, market research, advocacy, industry relations, and open forums, SCALA keeps its members connected to the industry leaders, being the single industry voice for smart cards, leading the discussion on the impact and value of smart card technology in Latin America and the Caribbean.

SCALA Center of Excellence

The SCALA Center of Excellence will be the first Integrated Circuit Card Training Center for Latin America and the Caribbean. This center will be equipped to train new and existing professionals to become industry experts.

The Center will promote the synergy between technology suppliers, universities, and key end users on the development of Integrated Circuit Cards.

This will allow companies to reduce their 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.

SCALA Committees

PAYMENTS COUNCIL

The SCALA Payment Council focuses on facilitating the adoption of chip-enabled payments and related applications in Latin America & the Caribbean.

The council brings together payment industry stakeholders, including payment industry leaders, merchants and suppliers, and is working on projects related to EMV, open payments, contactless payments, chip-enabled e-commerce and other smart card related projects. The Council's goal is to promote the market about the value of chip-enabled payments in improving the security.

Activities
The council works on projects to provide educational resources for innovative and convergence of smart card related implementations in transportation, and financial sectors.

The SCALA Council played a key role in the development of the "Card Payments Roadmap in Latin America & the Caribbean: How does EMV impact the payments infrastructure?" white paper. This technical document was the base for the EMV Conferences.

EMVTour conferences were held in different countries of the region including:
- Quito, Ecuador
- Santiago, Chile
- Buenos Aires, Argentina
- Punta Cana, Dominican Republic
- San José, Costa Rica

Open Payment Initiative in Transportation
The focus of this project is on the evolution of payments in transportation moves towards a system that accepts dual interface EMV compliant cards such as pre-paid, debit and credit cards.

IDENTITY COUNCIL

The SCALA Identity Council focuses on promoting best policies and practices concerning smart card application in identity within the Latin America & the Caribbean region.

The council addresses the challenges of security identity and develops guidance 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.

Activities
The council works on projects to raise awareness of the issues that organization and the public face in implementing and using identity systems.

SCALA's Identity Council provides support to different projects such as:
- Government ID Credentials
- E-Passports
- E-Visas
- Driver's License
- Social Security Systems
- Access Control
- National ID
- Healthcare
- Fare Collection & Transportation

Open Identity Initiative
The focus of this project is on the evolution of national identity, moving forward toward a system that will allows different countries to validate the National ID information.

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Computer Science Corp (CSC)
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