

## PROFILE SUMMARY

Ahmad Sultan is a Solutions Architect with a solid reputation of excellence, leadership, perfection and quality Systems Analysis, Engineering and Architecture. His unparalleled design details and willingness to take any task have resulted in consistently delivering, on time, superior quality solutions that exceed expectations. Described by a customer as “The Consummate Professional.” Ranked by LinkedIn as having “one of the top 5% most viewed LinkedIn profiles for 2012,” and in the “top 1% profile views” at Oracle and Sprint, in November 2014.

Mr. Sultan offers over 20 years of diverse experience in industry and academia. He conducted advanced R&D, led teams and individually carried out the end-to-end, full lifecycle development of new products and services. He provided frontend engineering oversight, lead cross functional and across organization teams to define, manage, and deliver key contributions, solving high risk, high visibility, and mission critical large-scale complex projects. This includes Lucent Common Wireless Platforms and IMS architecture; Sprint 4G LTE Network-Service transformation, and DIAMETER Signaling System; Call One HCI datacenter migration, and SD-WAN; automated test and measurement systems for Caterpillar and Hexcel.

The breadth, depth and diversity of Mr. Sultan’s expertise are a result of his ability to develop solutions to complex problems using analysis, communication skills and initiative, as well as streamlining processes driving efficiencies, and value to customers. Furthermore, he is a catalyst for positive change who empowers people, increasing their commitment and team spirit as a foundation for significant improvements to bottom line results.

## PROFESSIONAL EXPERIENCE

### **2018-Present ICT Solutions Architect (Principal), CELENUM Corporation, Naperville, IL.**

Providing Systems Architecture and Engineering for applications in Information Communication Technologies. The scope of work includes business case analysis, requirements development, solution architecture, engineering design, prototyping, interoperability testing, production configuration creation and handout to operations team.

### **2016-2018 Network Systems Architect, Call One, Chicago, IL.**

Provided front-end engineering guiding Call One to identify and select vendors having the superior and more beneficial technical solutions with substantial savings and deep discounts. Conducted research and development, authored Systems Engineering and Architecture requirement documents, managed vendors, evaluated bids, ran feasibility analysis, supported product line manager and core network engineering in rolling out Call One services, as well as authored and assisted in delivering project driving documents.

- Led companywide Cross Functional Team (CFT) in BSS/OSS Transformation efforts. Provided programmatic support, Vendor Management, requirement analysis, and executive status reporting.
- Led systems engineering and architecture of Call One SD-WAN:
  - Authored SD-WAN FRD, managed RFP process, conducted Bid Evaluation, and identified top two candidates. Technical team member testing the vendors’ solution remotely and at vendors’ facilities.
  - Supported Product Management team by developing the cash flow analysis, negotiating better agreement terms, obtaining deep discounts (up to 60%) and better utilization of market entry fees, creating HW and SW inventory selection and SKUs, compiling training material to downstream teams to aid in product rollout, and authoring SD-WAN Technical Reference Architecture Catalogue for sales engineers.

## TECHNICAL SUMMARY

### **Platforms**

Oracle DSR, Cisco, Brocade, F5, Linux/UNIX

### **Programming**

C/C++ LabView

### **Technologies**

VLAN/STP EIGRP/OSPF/BGP  
VRRP/HSRP/GLBP OSI/IGMP/IPv6  
Ether Channels VoIP/OoS  
2G/3G/4G LTE/EPC/IMS  
3GPP/2 UMTS/CDMA  
IETF/IEEE DIAMETER  
OMA-DM PacketCable

### **Certifications**

- IEEE WCP (Wireless Communication Professional) expires 2021
- Cisco IP Networks Routing/Switching & Design Certification CSCO11753619, expires 7/2019
- Oracle Unified Method (OUM) Level 3
- BSA Woodbadge 2015

### **Soft Skills**

- Change agent, coach and team builder
- Creative problem solving, open to new concepts
- Go-getter attitude and iron resolve
- Project Management, Business strategic planning
- Quality Systems & Processes
- Excellent communication and presentation skills

### **Professional Associations**

- IEEE 1982-1992, 2015-2017
- APEGM 1992-2015, APEGGA 2007-2009

### **Continuing Education**

- AWS Solution Architect (progress)
- SDN, OpenFlow, IoT (planned)

- Supported Project Management as well as Bids and Proposals teams by developing SD-WAN SoW, Project Management Plan, Project Management Workbook, and Change Order documents, as well as Service Order Fulfillment (SOF) process details and swim lanes, initial project plan (Work Breakdown Structure) and timeline.
- Supported Core Network Engineering team on the development of Call One SD-WAN standard configuration and options, network topologies, customer data collection forms, and Acceptance Test Plan.
- Led IT Infrastructure Migration to Hyper-Converged Infrastructure (HCI) by researching and developing HCI Feature Requirement Document (FRD), Vendor Management, Bid Evaluation, creating the implementation System Architecture an Engineering Document (SAED), sales terms negotiation, and project transition plan to IT team.
- Diversified Call One service offerings by prototyping, field testing, characterization of Fixed Wireless Access Service. Delivered field tests Method of Procedures (MoP), and Customer Config documents.
- Developed Architecture for core network integration into Equinix Private Cloud, by creating Single Port Deployment and Service Order Procedure to Microsoft Azure and Amazon Web Services.
- Developed Network Performance & Capacity Management FRD to roadmap upgrading the Network Operation Center (NOC) to carrier grade level operation platform.
- Commenced streamlining Network Service Orchestration (NSO) plans by authoring FRD for Network Design Data Management System, Use Case scenarios and diagrams to drive creating the Configuration Management Database System (CMDS), as well as Service Automation and Management (SAM) infrastructure.
- Supported Call One executive team in company Strategic Planning to help in charting the business future direction and roadmap.

## **2009-2016 Solutions Architect (Principal), CELENIUM Corporation, Naperville, IL.**

Providing Telecommunication Infrastructure Networks and Services Systems Architecture and Engineering Design. The scope of work includes business case analysis, requirements development, solution architecture, engineering design, prototyping, interoperability testing, production configuration creation and handout to production team. In addition, performing network analysis, troubleshooting, and conducting performance studies.

- Subcontracted to Sprint Wireless by Oracle Communications Global Consultancy Architecture as SME on DIAMETER routing agent, by Alcatel-Lucent as LTE Core Network Development Engineer, and to Cricket Communications as LTE Application Engineer. Technical contributions are provided separately below.
- Contributed to Oracle Consulting Knowledge Management information by authoring Solution Architecture and Engineering Design template for standardized development of DIAMETER Application solutions, and S6a Roaming Application Notes on Oracle DSR platform.
- Subcontracted to Walgreens as a Cisco Consultant. Providing, with in-house team, transparent migration to Walgreens Future Store Architecture by conducting 100% remote support of technical field staff for a nationwide rollout of new Cisco 2800/2900 ISR routers, 2960/3560 switches, and Fortinet Firewalls. This includes equipment installs, configuration, port turn-ups, integration testing, troubleshooting and resolving equipment moves and operation issues.
- Authored a competitive SBIR proposal, to the DoT, for developing an IoT Connected-Bicycle solution that provides situation awareness and enhances cyclists safety by integrating bicycles into an Intelligent Transportation System, using Vehicle-to-Vehicle, and Vehicle-to-Infrastructure hardware, DSRC wireless technology and WAVE short message communication protocol.
- Enabled company receive federal contract award, by authoring RFP response for "System Engineering and Analysis Advanced Technology Support Seaport-e Rolling Admissions," to the Department of the Navy, Naval Sea Systems Command. In addition, authored the RFI response for delivering "Technical & Engineering CISS Support," to Naval Air Systems Command.
- Coauthored architectural requirement document for a Remote Device Management architecture for Secure Wipeout Technology, a 4G Wireless Enabled Business Continuity solutions, based on TR-69-OMA-DM Standards.

## **Contract (Select Group): Sprint Wireless LTE Core Network Development, KS & IL, 2012-2016.**

Subcontracted by Oracle to Sprint as the DRA SME. Supported engineers, RAN OEMs and EMS implementing DIAMETER Signaling System solutions in lab and production, as well as troubleshooting. Authored Solution Architecture and Engineering Design Documents, prototyped solutions proof of concepts in Network Readiness Test (NRT) labs, created production configurations, developed Generic MoPs and configuration templates to streamline and standardize network elements deployment (MMEs, HSSs, AAAs, PGWs, Roaming), compiled configuration training guides, application notes, Network Architecture Planning documents (NAPD), customized Acceptance Test Plans (ATP), trained Sprint personnel on procedures, and guided network operation teams on MoP execution.

- Developed Sprint Inbound and Outbound roaming DIAMETER Signaling solutions for multiple applications such as S6a, S6b, STa, SWx, and Gx. Roaming partners included C-Spire, Cricket, USC, Next-Tech Wireless, Softbank, Aeris, Syniverse, NTelos and HP.
- Developed and certified MoPs for the DRA servers Firmware, Platform Management & Control (PMAC), and DSR release 4.x to 5.x Application upgrades. Certified the e2e upgrade process in the lab, including health check issues

fixes, NOAM rebuild, and executed ATPs including inter-DRA release test scenarios. Verified release OM/KPI/Alarm (MEALs) in-lab and their integration with Sprint performance tools.

- Created the documentation for NRT Labs architecture and inventory for each RAN vendor.
- Compiled DRA Generic Configuration MoPs as training guides and delivered training to Sprint operations team; this includes MMEs S6a, PGWs S6b/Gx, AAAs S6b/STa, as well as inbound and outbound roaming.
- Authored and presented Congestion Control solution for AAA S6b DIAMETER traffic using Oracle DRA Egress Message Control mechanisms. Conducted performance studies to evaluate the e2e impact of DRA egress congestion control on network stability, when suppressing S6a traffic surges towards the HSS/SPR.
- Created DRA configurations and MoPs for multiple platform migrations including AAAs, HSSs, Load redistribution, new elements addition.
- Authored the SoW for Sprint DIAMETER Edge Agenet (DEA), and supported DRA platform migration from DSR 3.0 to DSR 4.0 software release.

## **Contract LTE Core Network Development, Sprint Wireless, Reston, VA, 2011-2012.**

Subcontracted by Alcatel-Lucent, through Competent Staffing Resources, to Sprint to perform front-end engineering of eCSFB feature, required for transforming Sprint core network to 4G-LTE.

- Functioned as Sprint interface with telecom RAN/Core OEMs including Alcatel-Lucent, Ericsson, and Samsung as well as UE Chip manufacturer (Qualcomm). Aligned parties to meet Sprint feature requirements and performance exceptions.
- Authored eCSFB Feature Requirements Document, Transaction Flows, Call Scenarios, Detailed Requirements Document, Test Strategy and co-author of the Call Models, to support revenue generating Voice, E911, Wireless Priority Services, Location Based Services, SMS, and Voice Mail Notification services on LTE using 1xRTT infrastructure.

## **Contract (Apex Systems): Cricket Communications LTE Application Engineering, Denver, CO, 2010-2011.**

- Supported Cricket's migration of its Broad Band Mass Merchant (BMM) charging system to LTE PCC model, by aligning vendors on standards, reviewing and developing test requirements, authoring configuration and network architecture documents, IOT readout, and certifying compliance in the lab.
- Designed the F5 load balance solution for PCRF traffic. Lead interoperability testing of OCS, integration testing of PCRF into EPC.
- Deployed the target architecture by installing and integrating the PCRF nodes, SANs, as well as configuring Brocade Fiber Channel switches and F5 load balancers in production sites. Authored the as-built documents, and co-authored the Diameter Routing Agent RFP requirements.
- Performed troubleshooting, of BBMM I production installation, FastIron Switches and F5 Load-balancer configurations to identify the root cause of production Gx traffic issues. Collaborated with peers in developing and deploying solution in production; developed the fix MoP.

## **2007-2009 Senior Electrical Engineer II, Chicago Bridge & Iron, Plainfield, IL.**

Supervised and guided 11 engineers and designers in the design and development of the low and medium voltage electric power systems of East Tank Farm for Suncor Energy, Canada.

- Performed Hazardous Area analysis and determined its boundaries, for the stored combustible materials, based on national standards.
- Designed the lighting system, and performed loads studies to size cables, cable trays, grounding system according to Canadian and customer standards. Directed and supervised the short-circuit analysis study and protective relay coordination. Performed witness testing for the acceptance test of medium voltage switchgear and drives.
- Developed a standardized process to streamline the engineering design, development and review process for efficient team operation to deliver quality-engineering packages.
- Presented weekly status updates to management, earned value and project status reports on the scheduling design, bid evaluation, procurement, bill of materials, and approval of construction. Identified and mitigated risks. Provided roadmap for end-to-end of engineering deliverables and material procurement.

## **1999-2006 System & Performance Architect/Engineer, Alcatel-Lucent, Naperville, IL.**

Held systems architecture and systems engineering assignments as member of Telecom Core Network, Wireless Infrastructure, UMTS performance optimization, as well as IMS End-to-End architecture groups.

- Lead/consulting member of a number of cross functional teams that developed the software and hardware System Architecture and Requirement Documents (SARD) driving Lucent Common Wireless Platforms development—NGN, FLEXENT 1, 2, and Blade. All securing bids with Tier 1 Service Providers. Subsystems involved in include Hardware, Communication, Replication, Reliability, Performance, Availability, Run-Time, System Management, Overload Control, Security Management and Core.

- Enhanced company competitive positioning by contributing to the IMS solution foundations and eliminating asset redundancies by developing End-2-End Charging Architecture and roadmap features for IMS 3.x through 6.x, and co-authoring the IMS System Architecture Requirements Document.
- Grew company business by researching PacketCable™ standards to introduce Cable Solution in IMS portfolio.
- Improved wireless platform call capacity by 11%, on average, and reduced COGS by \$35 Million by directing cross organization, cross-companies team (20+ members) in performance profiling and optimization of UMTS RNC-BSC, CDMA, CDNap, EVDO, PCF applications.
- Strengthened executive negotiation with vendors, and set reliable performance expectations to applications by developing a Hybrid Platform Performance Model to accurately predict wireless BSC application performance.
- Improved customer relations by initiating and coordinating the establishment of EVDO performance test capability to provide rapid assessment of vendor hardware considered in the roadmap of the wireless telecommunication platform.
- Prevented adverse impacts on applications' performance by analyzing Sun® Microsystems Solaris 10 and 9 operating systems (OS) atomic performance and identifying OS10 performance issues that warranted improvement plans before its official release to market.
- Improved quality of work life and laid foundations for programs to improve job satisfaction by initiating "Best-in-Class" effort, in Wireless Architecture and Performance Department; all adding to efficient delivery of business bottom line results.

## **1996-1999 Principal Systems Engineer/Integrator, Computer Solutions, Inc.**

Assumed a lead position in business development and system solutions in computer-based test & measurement and industrial automation.

- Generated ~\$500,000 in revenues by leading an engineering team in the definition, development, integration, deployment, testing, and documentation of an extensible Compound Materials Mechanical Test System (Hexcel, UT) to centralize test and analysis methods, help customer reduce time to market and human test errors, as well as improve product quality control metrics.
- Paved the road to win new business by prototyping, in two days, the proof the concept of PC-based test system of IC Characterization of the first all-in-ear canal hearing aid (Sonic, UT).
- Reduced costs, test errors, time to market, and improved product quality for Caterpillar (IL) heavy equipment, by completing the full cycle development of Caterpillar's Automate Axle Test System, in three weeks.
- Grew sales, by developing demo test system for Sensor Monitoring and Fault Detection to help customer establish their business (Argonne National Lab/SmartSignal, IL).
- Improved vendor relationships by evaluating National Instruments BridgeVIEW 1.1b2, NI-DAQ5.0, and FieldPoint HW resulting in improved products' quality and robustness.
- Developed new business by authoring system requirement documents for SATURN Wiper Lever Accelerated Durability Testing, Siemens Roast Crystal Growth Furnace Monitoring, Thermal de-Polymerization Processor Monitoring and Control, and Polarization Dependent Loss Test System.

## **EDUCATION**

- Ph.D. Electrical & Computer Engineering, (4/4), University of Manitoba, Canada.
- M.S. Electrical Engineering, (E), Ain Shams University, Egypt.
- B.S. Electrical Engineering (H), Ain Shams University, Egypt.

## **HONORS AND AWARDS**

- University of Manitoba Graduate Fellowship, Canada, 1990 - 1992
- D.M. Stephens Memorial Fellowship, 1990 - 1991
- Ain Shams University Graduate Award, Egypt, 1987
- Ain Shams University Undergraduate Fellowship, Egypt, 1978 - 1983

## **CONTRIBUTION TO ENGINEERING AND TECHNOLOGY**

Authored, and co-authored over 50 contributions in Telecom Infrastructure R&D, computer-based data-acquisition systems, and refereed publications in Power Systems R&D. Partial list includes:

### **Telecommunications & Infrastructure**

#### **Systems Requirements & Architecture**

- Call One SD-WAN, FRD-002-17, October 31, 2017, Ahmad Sultan, Call One Proprietary.
- Call One Information Technology Infrastructure Virtualization, FRD-001-17, February 14, 2017, Ahmad Sultan, Call One Proprietary.
- Apps Fixed-Wireless Network, TPD-001-17, March 03, 2017, Ahmad Sultan, Call One Proprietary.
- DRA Upgrade to DSR 5.0.1 MoP, Ahmad Sultan, July 24, 2015, Sprint Proprietary.

- DSR 5.0.1 Firmware & Upgrade MoP, Ahmad Sultan, July 7, 2015, Sprint Proprietary.
- Adding an MME S6a to the DRA: A Generic Configuration MoP, Ahmad Sultan, Feb 3, 2015, Oracle Proprietary.
- Roaming S6a Generic DRA Configuration MoP, Ahmad Sultan, January 20, 2015, Oracle Proprietary.
- Samsung PGW Gx & S6b DRA Configuration MoP, Ahmad Sultan, Aug 24, 2014, Sprint Proprietary.
- DRA Configuration GUI Provisioning Guide: S6a Roaming, Ahmad Sultan, Aug 4, 2014, Sprint Proprietary.
- Roaming DIAMETER S6a Application Notes, Ahmad Sultan, April 04 2014, Oracle Proprietary.
- NexTech Wireless Cisco PGW Gx Outbound Roaming DRA Configuration MoP, Ahmad Sultan, Feb 3, 2014, Sprint Proprietary.
- SoftBank Mobile Inbound Roaming Solution Architecture & Design, Ahmad Sultan, December 12, 2013, Sprint.
- DRA Congestion Control of STa and S6b Requests towards AAA Servers, Ahmad Sultan, July 24, 2013, Sprint.
- Cricket S6a Inbound Roaming Lab Prototype Solution Architecture & Design, Ahmad Sultan, October 7, 2013, Sprint Proprietary.
- Enhanced Circuit Switched Fallback Detailed Requirement Document, Ahmad Sultan, August 17, 2012, Sprint Proprietary.
- Enhanced Circuit Switched Fallback Transaction Flows, Ahmad Sultan, August 17, 2012, Sprint Proprietary.
- Enhanced Circuit Switched Fallback Call Scenarios, Ahmad Sultan, August 17, 2012, Sprint Proprietary.
- Enhanced Circuit Switched Fallback Call Model, Jane Cobb and Ahmad Sultan, June 25, 2012, Sprint Proprietary.
- Enhanced Circuit Switched Fallback Feature Requirement Document, Ahmad Sultan, May 15, 2012, Sprint Proprietary.
- Enhancing SDR-SWOT Market Adoption & Company Value Based on Standard TR-069 and OMA-DM Protocols Remote Device Manager, Mowaffak Midani, Ahmad Sultan, February 2010, Celenium Corporation Proprietary.
- IP Multimedia Subsystem Architecture, ARD-1000 Releases 3.0, 4.0, 5.0, and 6.0, Chung-Zin Liu, Charles Salisbury, Wen Lin, David Huang, Konstantin Livanos, Yong Liu, Chris Fischer, Ahmad Sultan, January 2005 to September 2006, Lucent Technologies Proprietary.
- FLEXENT Blade Platform Overview and System Requirements & Architecture Detail, SRD-2009, Ahmad Sultan, et al, April 2003, Lucent Technologies Proprietary.
- FLEXENT Blade Platform (FBP) Software Assets Requirements & Architecture, SRD-2017, Ahmad Sultan, et al, March 2003, Lucent Technologies Proprietary.
- Release 1 & 2 FMS Platform Performance Budgets and Guidelines, SRAD-2020, Ahmad Sultan, Daryl Thompson, September 2002, Lucent Technologies Proprietary.
- Release 2.0 FLEXENT Mobility Server (FMS) Platform Software Features & Support for Satellite Program, SRAD-2004, Ahmad Sultan, et al, December 2001, Lucent Technologies Proprietary.
- FLEXENT Mobility Server (FMS), and FLEXENT Wireless Router Platform Software Features, SRAD-2002, Ahmad Sultan (Editor/Owner), et al, August 2000, Lucent Technologies Proprietary.
- FLEXENT Mobility Server (FMS) Platform Hardware Features, SRD-2000, Ahmad Sultan, Harold Jenkins, July 2000, Lucent Technologies Proprietary.

## White Papers

- An Overview of the Fair Share Scheduler & its Performance Impacts, Whitepaper, Ahmad Sultan, May 2003, Lucent Technologies Proprietary.
- The Impact of Solaris™ Security Mechanisms on The FMS Platform Performance, Whitepaper, Ahmad Sultan, February 2003, Lucent Technologies Proprietary.
- Technician Interface Security: Phase II, Whitepaper, Ahmad Sultan, October 1999, Lucent Technologies Proprietary.

## Performance Impact Studies & Presentations (Lucent Technologies Proprietary)

- Application Performance Predictions & Measurements Jade Jalapeno Configurations, Ahmad Sultan, September 2006.
- EVDO on Jade 1 GHz R27 Performance Characterization, Ahmad Sultan, Jay Singh, Bryan Lauer, Sudhir Umarale, Prabu Ananthakrishna, Sherry Han, Larry Schroeder, June 2006.
- Performance Tuning of Solaris Blade to Support UMTS Capacity Needs, Ahmad Sultan, Howard Mickley, Larry Schroeder, May 2006.
- Relative Atomic Characterization of OS10 vs. OS9 on S240, Ahmad Sultan, April 2006.
- Time-Share Subsystem Roadmap: Platform Capacity Projections, Ahmad Sultan, February 2005.