

**AZEEM Muhammad Sadiq**  
**Innovation and Digital Transformation Expert**

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### **CAREER PROFILE**

An innovative broadly skilled IT/GIS/Remote Sensing products leader and spatial data products specialist with extensive experience in Spatial workflows and applications development, administration, analysis and management. Expert in GIS, Asset management systems, ETL, Spatial Data Provenance and Metadata, Remote Sensing and Information Technology projects and teams management. Proficient in ESRI - ArcGIS and much other world-leading GIS and Remote sensing technologies for innovative Desktop and Enterprise Solutions. Designed GIS Architecture, Data Models and User Interfaces of Planning and Utility Applications for Government departments and Development Authorities. Seeking an opportunity to apply substantial abilities and make an effective contribution to any industry.

### **KEY SKILLS**

- Extensive experience in Agile spatial data products strategic program management
- Proven expertise in Enterprise spatial database strategic design & implementation
- Solid command of innovative data modelling, spatial products technical management
- Outstanding skills in geoprocessing, spatial analysis, and statistical techniques
- Demonstrated abilities in Cartography and Illustrative mapping
- Sound knowledge and experience in Remote Sensing and Satellite Image Processing
- Excellent understanding of GPS data collection, processing.
- An innovative approach and experience in spatial planning and modelling, EIA, and Engineering Support Analysis
- Extensive experience in Technical Report Writing, Proposal development, and Research Publication
- Considerable experience in project management, teams management and client management and support
- Experienced in pre-sales and post-sales activities, good at devising solutions to a non-technical audience
- Played a progressively larger role in managing and implementing new departments from scratch with fellow members in larger project portfolios with small project teams for IT & GIS/Survey Projects
- Implemented Geographic information systems and data modelling lab with a dedicated team for Ministry of sciences and technology.
- Guided and oversaw project definition, scope and budget development, project planning, execution, control, and closing consistently throughout career for IT, GIS and Telecommunication projects.
- Built and maintained relationships with a variety of people, from Vendors and procurement personnel, through to Chief Executives, Chief Operations Officers and senior executives of companies.
- In the Information technology industry, maintained strong interdepartmental, inter-organizational and corporate office personnel contacts, allowing for a better understanding of each other's information and operational needs. Established MOU for different project and operations.

## KEY ACHIEVEMENTS

- Successfully implemented Agile GIS Review program in Queensland Reconstruction Authority
- Developed a roadmap for the Queensland Reconstruction Authority Spatial data strategy
- Actively participated and produced roadmap Distater Mangement Data Coordination initiative of Queensland Government with QFES and other stakeholders
- Produced and managed value-added products of MapData Services
- Developed and managed MDS Australia Hospitals location data product
- Managed and developed MapData Services portfolio of spatial and location intelligence products for Australia and NewZealand as PSMA reseller
- Participated in next-generation spatial infrastructure project funded by CRCSI and Australian government partners for Foundation Spatial Data
- Successfully completed GIS of stormwater drainage network project of Department of Main Roads, WA, Australia
- Successfully completed power supply network project of Western Power, WA, Australia GIS data Officer
- Designed and implemented enterprise GIS(emergency, fire, infrastructure, traffic) in the National command centre, state of Qatar
- Successfully developed GIS departments in many organisations and trained professional teams for high-quality data production and spatial analysis
- Delivered digital archive mapping project at Center of GIS, Ministry of urban planning, state of Qatar
- Managed and implemented geographic database systems at multiple government and private Organisation
- Implemented GIS and IT system at PCRWR, Ministry of sciences and technology

## SOFTWARE SKILLS

<i>GIS, Data Management and Workflows</i>	<ul style="list-style-type: none"><li>▪ ESRI ArcGIS and its Extensions; AutoCAD Map; Global Mapper; PCI Geomatica, IDRISI; Manifold GIS; ILWIS; Quantum GIS (QGIS); SAGA GIS; GRASS GIS, and SAFE FME Desktop and Server , MIMS/AMPDX, DOCS/DMS, (SPIDA – ArcGISEdit, ArcFM &amp; Dekho), DM; SPIDA; Tableau Desktop; Apache Hadoop, SpatialNET, TPNI, BricsCAD, DBYD, DataShed, QAQCR, LogChief, Micromine and Surpac, Confluence, Harvest, Asana, Jira,</li></ul>
<i>Server GIS</i>	<ul style="list-style-type: none"><li>▪ ArcGIS Server, MapServer and GeoServer</li></ul>
<i>Remote Sensing / DEM Extraction</i>	<ul style="list-style-type: none"><li>▪ ERDAS Imagine; Earth Resource Mapper (ER Mapper); ENVI, GDAL</li></ul>
<i>DBMS And Spatial Databases</i>	<ul style="list-style-type: none"><li>▪ SQL Server with Spatial and ArcSDE, Oracle 11g with Spatial and ArcSDE, PostgreSQL with PostGIS and ArcSDE, MS Access</li></ul>
<i>GIS Scripting</i>	<ul style="list-style-type: none"><li>▪ Python (ArcPy for ArcGIS); MapObjects (ESRI); ArcObjects (ESRI), Microsoft Visual Studio.Net (VB and C#); Java, ArcGIS Online, Survey 123, ArcGIS for Workforce, ArcGIS Collector</li></ul>
<i>GNSS &amp; Topo Data Processing</i>	<ul style="list-style-type: none"><li>▪ SOKIA Total Stations, and Magellan and Garmin Handheld GPS</li><li>▪ ArcGIS Survey Analyst and Sokkia Link, LiDAR</li></ul>
<i>Cloud &amp; Machine Learning</i>	<ul style="list-style-type: none"><li>▪ AWS, FME Cloud, GIS Cloud,</li></ul>
<i>Other(Functional)</i>	<ul style="list-style-type: none"><li>▪ Airflow, Apigee, Mapbox, Mapbox Studio, Docker, Photoshop, Illustrator, CoreIDRAW</li></ul>

## PROFESSIONAL EXPERIENCE

**Mojo Soup(Queensland Reconstruction Authority), Brisbane**  
**Senior GIS Specialist**

**March 2018 to Date**

- Work with the General Manager Operations, Chief Executive Officer and management team to ensure QRA's operations shape the development of an optimal reconstruction and resilience program across Queensland, providing leadership in relation to the organisation's management of spatial data;
- Assist in overseeing the management of the GIS workforce to ensure advanced GIS services and solutions for project briefs and activities are delivered to organisational and stakeholder expectations of time and quality, including ensuring that workforce planning and resourcing is appropriate given the variable level of demand across the year;
- Key lead for GIS deliverables, including QRA GIS projects and development of innovative technical solutions using the ESRI suite of GIS products to support the business including providing a final endorsement that outputs meet all applicable controls and requirements;
- Develop and maintain collaborative and productive relationships with internal and external stakeholders, including users of QRA's GIS services, agencies influencing GIS policy and external vendors;
- Provide specialist advice and geospatial support to the QRA leadership and operations team and stakeholders outside the organisation including Queensland Government disaster response agencies;
- Provide GIS subject matter expertise to QRA projects – particularly development of the new grants management system project – that are related to location and geographic information.
- Undertake related project and other duties of equivalent complexity as required; and
- Represent the QRA to external stakeholders in support of QRA objectives.
- Deploy to disaster-affected regions at short notice to assist in damage assessment of housing and public infrastructure.

**MapData Services (ESRI Australia Group), Australia** **April 2017 to March 2018**

**Senior GIS Analyst**

Responsibilities are to

- Support to MapData Services and ESRI Australia business needs and Contribute to the engineering, analysis and insight of client and supplier data, performing spatial modelling, data manipulation, integration, testing, documentation and training Understand and recommend spatial data and technologies most appropriate for projects and solutions
- Apply to understand of spatial data types and applied data migration ETL through FME and coordinate systems and spatial analysis techniques with various projects
- Define data needs, evaluate data quality, and extract/transform data for analytical projects and research Investigate, evaluate, define and drive the development of data products from third-party sources
- Keep abreast of spatial industry trends and how they may impact client projects
- Ensure high-quality client service and results by:
  - Liaising with subject matter experts
  - Working with best-practices and relevant standards
  - Creating a focus on clients
- Provide product and service-specific knowledge and respond to technical enquiries throughout the sales cycle

- Understand client needs and elicit what they are trying to achieve
- Support the business in presenting the technical capabilities in data engineering, data analysis and data insight of the company and the technical case for the solutions offered, promoting the importance of geography
- Contribute to technical proposals describing the solution and responding to customer requirements
- Exhibit sound technical competence and knowledge of Map Data Services' products including in-depth functionality and high-level overview knowledge of the technical environment in which the products work and how they relate to the vertical or industry in which the company operates
- Contribute to achieving team productivity targets
- Make recommendations to improve existing processes and methodologies
- Engage with the Services Delivery, Data Management and Presales groups to ensure solutions are reviewed and estimated as required
- Some travel to client sites, conferences and other marketing events
- Understand and adhere to company policies and procedures
- Understand and adhere to relevant engineering policies and processes

**Major Consulting Project:**

**Woodside Energy Ltd., Australia (short-term Contract)**

**FME Consultant/Developer**

**Sept 2017 to Nov 2017**

- The role is to be the Safe Software FME expert on the NGSDM Project team.
- To design and build the FME ETL component using the FME tools.
- To work with the NGSDM Lead and SDTP solution architect to build the FME ETL component of the NGSDM Architecture.
- To work with the geomatics team and through the geomatics team's business relationships with the data suppliers, enhance the geomatics teams existing geospatial data load procedures through automation using FME Server.
- To align with Digital/IS&S IT release management and change control procedures as required
- To align with the SDIM Software Support and SDIM Data Management teams as required

**Asplundh NSW, Australia (Contract)**

**March-April 2017**

**GIS/IT Engineer**

- Responsible for building, enhancing and re-engineering software applications; GIS, web, desktop and mobile for assets and work locations
- Managing GIS Cloud Services for field operations
- Migration of existing GIS system to Arc GIS Online solution
- Responsible for the development and creation of Geodatabases and its schemas
- Development and customisation of Collector for ArcGIS, Workforce for ArcGIS and Survey 123 for a complete data collection, dissemination, auditing and workflow solution

**Fulton Hogan, Perth, Australia (Contract)**

**Oct 2016 to Feb 2017**

**Design Consultant**

- Assets design and delivery of NBN fixed telecommunication access networks, copper, fibre, aerial, underground and inside building solutions.
- Designing as per Access network principles, industry standards, and installation practices based on splicing, termination and testing methodologies.

- Executing construction of passive networks and pit & pipe for all access network technologies including copper, HFC, and Fibre.
- Responsible for end to end delivery services including Detail Design in Spatial.Net, FIR, Construction Plans, Project Costing (BOM/BOQ), As-built & defects and design issues with coordination with client

**Curtin University, Perth, Australia**  
**Geographic Information Systems**  
**Teaching Staff (Part Time)**

**May 2014 to Oct 2016**

- Teaching subjects: 1- Coordinates and mapping systems 2- Photogrammetry 3- Spatial statistics 4- Spatial Data Processing
- Research and publication of Spatial Infrastructure and provenance data models, strategies, prototypes, their integration, analysis, presentation, and maintenance to implement semantic web technologies in Next-generation spatial Infrastructure for Australia and New Zealand as spatial software(ESRI, FME, Open sources) applications, services, and GIS data models but not limited to these.
- Prepared land administration data model, Improving spatial data structures and standards (through the use of Universal Resource Identifiers for identification of spatial resources on the web; XML schemas and Resource Description Frameworks that permit machine-readable code to be controlled by plain English enquiries; and ontologies to permit the complex relationships between spatial datasets and applications to be made so that automated processing can occur)
- Developing rules and routines for linking spatial address and location datasets, research on spatial data provenance using semantic web technologies and design proof of concept
- Analysing, designing, coding, testing of modifications and enhancements and the support of complex prototype programs
- Conducting research and devising solutions for spatial information problems in the industry in Australia and New Zealand, Writing research papers on Spatial Infrastructures and presenting in Conferences
- Assistance to Science Director and Research Fellows with Program 3 next-generation spatial Infrastructure funded by CRCSI and 43pl partners and addressing their spatial infrastructure issues

**Talis Consultants Pty Ltd (Department of**  
**Main Roads, WA Project) Australia**  
**Senior GIS Analyst (Team Lead)**

**Jun 2015 to Oct 2015**

Talis is a small, versatile consultancy with a strong focus on client service across the public and private sectors. We provide specialist expertise in Asset Management, Infrastructure, Environmental Services, GIS + Spatial Intelligence and Waste Management.

**Responsibilities**

- Main Roads assets GIS Processing, Conversion, Geodatabase creation, developing models for data transformation into GIS suitable for use. Fit for purpose asset data preparation from multiple sources and heterogeneous standards.
- Main Roads assets data workflows creation and implementation. Assigning duties and task to GIS analysts and providing expert insight to make decisions.
- Managed 4 technical resources during the project life cycle
- Implemented spatial analysis and processes to produce client defined data standards, Scripting, modelling and filtration of stormwater drainage network GIS datasets
- Reporting of data management activities and findings to the project manager to communicate with Main Roads, WA.



- Developed and implemented Spatial ETL workbenches and data models to extract data from multiple GIS sources into an Oracle Spatial database perform spatial transformations and finally to provide an extract of this data into required GIS formats to support the needs of a number of business areas.
- Developed geodatabases of stormwater drainage network with Oracle Spatial databases.
- Designed, developed, tested and implemented processes to correct and improve data quality.
- Worked with the application projects manager, enterprise design architects, and technical teams to ensure solutions meet project and enterprise requirements.
- Participated in multi-disciplinary teams comprising of managers, technical leads, business analysts, developers and external providers in the sourcing and improvement of data, design, development, testing and support/maintenance of software applications.
- Developed documentation relating to data, software, and processes, including the production of technical documentation and contribution to user documentation.
- Provided technical advice and recommendations to team members and stakeholders on requirements for development.
- Worked with application resources to advise technical risks, issues, conflicts and priorities, to achieve the required project milestones.
- Reporting and Quality check on geodatabases on daily basis, Creation of topologies and geometric networks

#### **Achievements**

- Successfully delivered GIS Stormwater drainage network for Department of Main Roads, WA, Australia

#### **Western Power, Western Australia (Alliance Recruitment, Australia)**

**Feb 2015 - May 2015**

Western Power is a Western Australian State Government owned corporation with the purpose of connecting people with electricity in a way that is safe, reliable and affordable.

#### **Data Officer**

- General processing work for asset data; accurately input asset information data from projects or work covering: design, installation, commissioning, construction, operation and maintenance of asset information. Analyse and interpret processes to ensure data integrity and process efficiency whilst providing advice on updating technical asset information in Western Power's information systems.
- Assist with investigations into methods and processes of work, data system performance and data quality to achieve commercially competitive standards for quality, service delivery, costs and customer satisfaction
- Configuration and installation of software, datasets, applications

#### **National Command Centre, Ministry Of Interior, Qatar Systems Administrator**

**Mar 2010 – May 2014**

#### **Responsibilities**

- Technical assistant to GIS Users (Police, Fire Service, Emergency Medical Response, Traffic Control emergency services, Civil defence, Coast Guard, Internal Security Forces), Workflows, Data model design and implementation, GIS Server Administration, Planning and communicating specific work tasks for GIS database creation and management, application development and ongoing maintenance for data, developing situation awareness maps
- Conducting use case analysis of business functions to establish IT/GIS application requirements and geospatial model requirements for COP

- Identifying and defining appropriate applications of the system and associated GIS products, Preparing initial work and cost for GIS development activities, Managing Implementation Services, Resolving Custom application problems
- Coordinating Interdepartmental technical/project work activities and outside agencies
- Designed developed, tested and implemented processes to establish and maintain routable road networks and associated datasets.  
Developed automated tests to ensure the spatial data produces reliable, high-quality results when used for routing vehicles, directing workflows and in cartographic representations.
- Data validation and topology, Domains, Version Management, Navigation data preparation and QA, 3 D data preparation, Different cartography tasks
- SDE & Spatial data Management-data loading, publishing of services and caching, Spatial Index Tuning, DBMS statistic performing, data documentation
- Planning and analysing of analytic procedures and methodologies for performing the applications, Fixing, enhancement & updating of attribute data, GIS Technical support services, Managing & Fixing QC/QA Comments, Designing Layouts
- Managing Maps printing and User Training services
- Team lead for 8 resources in data management, editing, publishing, and training

#### **Achievements**

- Delivered Cost cutting products with old equipment and new software packages for MDT's. Established Technical setup of GIS Centre at National Command Centre of State of Qatar
- Worked with project planning, implementation team for new DC & DR sites and trained 8 resources
- In-house Planning and development of National level geodatabases by collecting data from different sources

**Ideal Solutions Company, Doha, Qatar**

**Jan 2009 to Feb 2010**

#### **Systems Engineer**

##### **Responsibilities**

- Project management, Development, support, training and leading development & operations team.
- Management and active participation in the software development lifecycle (user needs study, specifications documentation, analysis, the design of databases, and application interfaces, documentation manuals, training and technical support).
- Participation in sales and pre-sales activities (meetings, follow-up, convincing and concluding, proposals, presentation, and demonstrations).
- Participation in business development with new ideas, solutions, services and products.
- Adopt & enforce standard software development methodology & procedures
- Successfully delivered and Implemented NMAP(Centre of GIS)-UPDA Doha Project
- Complete Solution document on AVL and Dispatch System for Developers

**PCRWR-Ministry of Sciences and Technology**

**Aug 2007 to Dec 2008**

#### **System Analyst**

##### **Responsibilities**

- The supervision and responsibility to Plan, organise, direct, control and evaluate the operations and maintenance activities of the PCRWR domain, servers, networking, and systems connected to the network.

- Completely responsible for Data Centre, which includes Database Server, Domain Controller, Exchange server, web server and ISA server.
- The Supervision and maintenance of the GIS, Modelling and other software/hardware available in the GIS/Modelling lab.
- Regular updating of software and licenses and packages available on the systems including windows, firewall, antivirus, and other related tools in the GIS and Modelling Lab as well as on other systems of PCRWR.
- Undertaking GIS-based Assignments by Director Hydrology from time to time under intimation to Director GIS.
- Undertaking other assignments by Project Director GIS/Secretary PCRWR and/or Co-Project Director (GIS).
- Development of a dynamic website of PCRWR and regular updating along with its maintenance. Up gradation of networking facilities at PCRWR HQ by implementation Wi-Fi and FTTO solutions.
- Undertaking GIS-based Assignments by other sections through Project Director GIS.
- Identifying, investigating, and analysing business processes, procedures, and work practices. Identifying and evaluating inefficiencies and recommending the optimal business practice, and system functionality
- Successfully established and Implemented GIS Centre and Hydrological Modelling Centre
- Successfully established completely functional Data Centre, Supervised a team of 5 persons for daily operations, Development and Launch of New Web Site and a Decision support systems
- Organised and Conducted International GIS Conference to promote PCRWR GIS Vision
- Implemented and Upgraded LAN Infrastructure for HQ PCRWR
- Upgraded and Implemented PCRWR Internet facilities at HQ.

**Teralight Pvt Ltd**

**Feb 2005 to Aug 2007**

**Systems Engineer**

**Responsibilities**

- Coordination on surveying, system development tasks to include design, integration, formal testing and project Management, Develop and complete actions in system specifications, technical and logistical requirements and other disciplines
- Creation and maintenance of technical documentation to ensure efficient survey planning and execution
- Manage system configurations, hiring, supervision, Installation, Training, assistance Administrators, ROW, HDD Manager, pre-sales activities, Preparation of Geodatabases, Data Modelling, Scanning, and Digitizing
- Customers and sub-contractors, vendor communication and interaction, Market Research, presales, technical operations, Compiling and integrating map data for automation from diverse sources such as existing maps, aerial photography and satellite images. solving problems regarding map production and geodatabases
- Designing high-quality maps and geographic products, spatial and tabular databases, surveys and documentation, Working with users(environmental, geologist, Highway infrastructure department) to formulate and document business requirements
- Identifying, investigating, and analysing business processes, procedures, and work practices, Identifying and evaluating inefficiencies and recommending the optimal business practice, and system functionality
- Using project management methodologies, principles and techniques to develop project plans and to cost, resource and manage projects, Taking responsibility for



deploying functional solutions, such as creating, adopting and implementing system test plans, which ensure acceptable quality and integrity of the system

- Completed HDD Project at National Level, Established GIS Department
- Completed successfully OFC projects with International Telecom Operator for Civil works
- Completed successfully OFC projects with DEFCOM

### **EDUCATION ACADEMIC ACHIEVEMENTS**

PhD GIS/AI/Big Data	Spatial Information (Specialization GIS / Data Analytics / Big Data/ Spatial Data Provenance), Curtin University of Technology, Australia(In Progress) 2014-2018
Master of Sciences	GIS and Remote Sensing (School of Civil and Environmental Engineering, NUST )2005-2007
BSc. (Honours)	Information Technology & Database Management (Unitech) 2000-2004

### **FURTHER TRAINING**

- AWS Technical
- Implementing Real-Time Analytics with Hadoop in Azure HDInsight
- Processing Big Data with Azure HDInsight
- Engineering Applications of LiDAR
- Python Scripting for Geoprocessing Workflows
- Python Scripting for Map Automation
- Basics of Python (for ArcGIS 10)
- Get Started with Web AppBuilder for ArcGIS
- Python for Everyone by ESRI
- Getting started with Arc GIS Workflow Manager-ESRI
- ArcGIS for Server: Site Configuration and Administration -ESRI
- ArcGIS Data Interoperability Basics -ESRI
- Getting started with Arc GIS 10.0-ESRI
- Introduction of Arc GIS Server-ESRI
- Working with Arc GIS 3D Analyst-ESRI
- Working with Arc GIS Network Analyst-ESRI
- Working with Arc GIS Spatial Analyst for Geospatial Intelligence-ESRI
- Working with Arc GIS Spatial Analyst-ESRI
- Enhancing Human productivity & management skills
- Productivity tools 5 S & Kaizen Management
- 3 G & NG NETWORKS
- Project Management Professional

### **AFFILIATION OF PROFESSIONAL SOCIETIES**

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Certified by VETASSESS as Spatial Scientist Professional Level 1, Australia

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Member of Spatial Information and Cartography Commission(Surveying and Spatial Sciences Institute), WA, Australia

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Member of Surveying and Spatial Sciences Institute Regional Management Committee, WA, Australia

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Open Geospatial Consortium, USA

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Member, MODSIM, Australia

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## PUBLICATIONS

Besides professional career, I have always been associated with academia and produced research publications in the field of geo-informatics and its allied disciplines. Few of my publications are as follows:

### Papers:

- 1- Muhammad Azeem Sadiq, "Optical Fiber Cable Management by GIS, GPS and Satellite Imagery" Innovative applications in Service delivery, The Geoinformation society of South Africa Conference 2007, South Africa
- 2- Muhammad Azeem Sadiq, "Shigar Town Infrastructure Management and Planning using Geospatial Technologies" 2009, Master Thesis, IGIS-NUST, Islamabad, Pakistan
- 3- Muhammad Azeem Sadiq, Muhammad Umar Khattak, "GIS-based Infrastructure management and Planning System", The annual Free and Open Source Software for Geospatial (FOSS4G) conference 2008, Cape Town, South Africa
- 4- Sadiq, M. A, A. Iftikhar and M. Naeem, "Pollen Allergy Hazard Mapping in ICT," IEEE, 2007 3rd International Conference on Recent Advances in Space Technologies, Istanbul, 2007, pp. 641-646. doi: 10.1109/RAST.2007.428407
- 5- M. A. Sadiq, G. West, D. A. McMeekin, L. Arnold and S. Moncrieff, "Provenance ontology model for land administration spatial data supply chains," Innovations in Information Technology (IIT), IEEE, 2015 11th International Conference on, Dubai, 2015, pp. 184-189. doi: 10.1109/INNOVATIONS.2015.7381537
- 6- M. A. Sadiq, G. West, D. A. McMeekin, L. Arnold and S. Moncrieff, "Feature and attribute level provenance for spatial data supply chain using semantic web technologies" 21st International Congress on Modelling and Simulation (MODSIM2015), Gold Coast, Australia, 2015, pp.145. ISBN 978-0-9872143-4-8
- 7- Varadharajulu, P., Azeem Sadiq, M., Yu, F., McMeekin, D. A., West, G., Arnold, L., & Moncrieff, S. (2015). SPATIAL DATA SUPPLY CHAINS. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XL-4/W7, 41-45. doi: 10.5194/isprsarchives-XL-4-W7-41-2015
- 8- Azeem Sadiq, M., McMeekin, D., Arnold, L., "Spatial Data Supply Chain Provenance Modelling for Next Generation Spatial Infrastructures Using Semantic Web Technologies", GEOProcessing 2016: The Eighth International Conference on Advanced Geographic Information Systems, Applications, and Services, Venice, Italy, 2016, pp.146-153. ISBN: 978-1-61208-469-5

### Presentations:

- 9- Presented Western Australia Surveying and Spatial Science Institute (WASSSI) Conference 2014 – Blurring the Boundaries, Perth, WA, Australia
- 10- Cooperative Research Center Annual Conference 2014 in Perth, WA, Australia
- 11- Cooperative Research Center Annual Conference 2015 at Melbourne, Victoria, Australia
- 12- Guest Speaker at Western Australia Surveying and Spatial Science Institute (WASSSI) on The transformation and processing of digital cadastral data at the CIG meeting 2015, Perth WA, Australia
- 13- Spatial Data Supply Chain Provenance Modelling for Next Generation Spatial Infrastructures Using Semantic Web Technologies", GEOProcessing 2016: The Eighth International Conference on Advanced Geographic Information Systems, Applications, and Services, Venice, Italy, 2016
- 14- Blockchains implementation in Land administration / Cadastral datasets at Cooperative Research Centre Annual Conference 2016, Sydney, NSW, Australia

### Posters:

- 15- Cooperative Research Centre Annual Conference 2014 poster presented at Perth, WA, Australia
- 16- Cooperative Research Centre Annual Conference 2015 poster presented on "Tracking data provenance" at Melbourne, Victoria, Australia
- 17- Cooperative Research Centre Annual Conference 2016 poster presented on "Spatial Workflows data provenance" at Sydney, NSW, Australia