



JAN VAN BENNEKOM-MINNEMA

PRESENT POSITION
Specialist

Land Administration, Spatial Planning, GIS and IT

PROPOSED POSITION

KEY QUALIFICATIONS

Mr Jan van Bennekom-Minnema is a specialist in Land Administration, Spatial Planning, GIS and IT. He has worked in Africa, West and Eastern Europe, Central and South America, the Caribbean, Middle East and Asia on information system development projects. These covered urban/spatial planning and development, land administration, systematic property registration and field tenure data collection, land registry and cadastre.

His main experience is on (geographical) information system and database development projects. He also has expert theoretical and practical knowledge of project and quality management, enterprise architecture and information system development.

In many projects, Mr Van Bennekom-Minnema handles multiple roles: project manager; IT/IS solution architect; spatial data analyst and data conversion and migration expert; quality auditor and tester of software, data and document deliverables; writer of procurement bidding documents and system requirements; business process (re)design; software designer and developer; and trainer of local specialists and staff. He is an all-round 'full stack' developer and has extensive experience in all phases of projects, especially with the development of large, mission-critical (geographical / web based) information system architectures.

In 2008, he graduated with distinction 'cum laude' for the Master of Science programme 'Geographical Information Management and Applications' with a thesis on the Model Driven Architecture and automatic generation of software in the context of the ISO standard Land Administration Domain Model (LADM, ISO 19152).

EDUCATION

Masterclass 'IT Architecture'. NCOI University (The Netherlands). 11/2014 - 2/2015

Master of Science 'Geographical Information Management and Applications', graduated with distinction 'cum laude'. Universities of Delft, Utrecht, Twente (ITC), and Wageningen (The Netherlands). 8/2005 - 6/2008

Post-graduate 'Direct Marketing Management' (DMM) based on 'big data' repositories. NIMA Dutch Institute for Marketing (The Netherlands). 1/1994 - 1/1995

Post-graduate 'Business Administration'. Nijenrode University (The Netherlands). 7/1989 - 6/1990

Bachelor of Science 'Electrical Engineering' (Industrial Process Automation). Technical School Electrical Engineering (The Netherlands). 7/1985 - 6/1989

EMPLOYMENT RECORD

COWI, Denmark. 3/2004 - present

CSC, The Netherlands. 9/2002 - 2/2004

DHV, The Netherlands. 12/1998 - 8/2002

Oracle, The Netherlands. 7/1995 - 11/1998

Mr. Van Bennekom-Minnema is fluent in the English-language (verbal and in writing) and has a considerable knowledge and experience in the following areas and tools:

- > Land management, administration and planning.
- > Information system requirements modelling, design, and development.
- > Relational database management systems (geo-DBMS).
- > Geographical information systems (GIS), data collection, analysis and mapping.
- > Project and quality management, information system development methods (ISDM).
- > IT solution architecture, configuration and release management.

SELECTED PROJECTS

SUMMARY OF EXPERIENCE TOOLS AND METHODS. Land Administration, GIS and IT Specialist

Since 1990, involved in various international information system development projects, covering the fields of land administration, (systematic/first) registration of property, cadastre, spatial development framework/spatial planning. Working in the following areas with tools and methods:

- > **Land Management and Administration, Spatial Development/Planning:** Various land management, land administration, cadastre and property registry systems; business process reengineering; systematic land registration; ISO19152 LADM, spatial planning and development framework (SDF); Solutions for Open Land Administration (SOLA).
- > **Project & Quality Management and [Geographical] Information System Development Methods:** PMBOK, PRINCE2, Scrum, Oracle PMM & CDM, DSDM, RUP, MS Project, Software Quality Assurance and Control, source code statistical analysis, Test Strategy, Training Strategy, MCC/World Bank/ADB/DFID/EU Bidding Documents & Procedures.
- > **IT Architecture/Configuration & Release Management:** IS/IT Strategy, Enterprise IT Architecture, TOGAF, Zachman, NSDI, Enterprise Architect, Archi Modelling tool, Open GIS standards, Oracle Software Configuration Manager, ITIL, MS Team Foundation Server, Visual Source Safe, GitHub Revision Control, Cloud hosting, ArcGIS Server, ODK Aggregate, MS Windows Server, Ubuntu, GlassFish Application Server.
- > **Information System Modelling/Design:** Enterprise Architect, Unified Modeling Language [UML], Business Process Model Notation [BPMN], Object Constraint Language [OCL], Visual Paradigm, Oracle Designer, MS Visio.
- > **Information System Development/Programming:** MS Visual Studio, C#, Angular, .NET C# Web API Core 2, ASP.NET MVC Web Application Framework, QGIS Plugin Development, Python, Django Web framework, Google Web Toolkit, DevExpress, Crystal Reports, Jasper Reports, Oracle Developer, Oracle SQL & PL/SQL, MapInfo Basic, Visual Basic, Excel Basic, PHP, NetBeans IDE, Eclipse, Java, HTML, XML, GML.
- > **Relational Database Management Systems [geo-DBMS]:** PostgreSQL/PostGIS (geometry, raster, topology, routing), Oracle Spatial, MS SQL Server, MySQL, SQLite, CS Pro statistical and census tools, MS Access, Firebird, M-Files Workflow & Document Management.
- > **Geographical Information Systems (GIS), Data Collection and Mapping:** ArcGIS, QGIS, PostGIS, GDAL data conversion, Open Layers, Geoserver, TileMill/Mapbox, Mapserver, MicroStation, MapInfo, ArcSDE, ArcIMS, GeoMedia, Autodesk, Blender, Unity 3D, Envision Tomorrow Urban Planning Scenarios, Computer Assisted Personal Interviewing (CAPI) and field collection of land tenure data: Gis4Mobile, MapIt, Open Data Kit, (Geo)ODK Collect, Survey123.

DEVELOPMENT OF MASERU CITY MASTERPLAN. GIS Expert

The Project is part of World Bank's Private Sector Competitiveness and Economic Diversification Program (PSCEDP) Phase II. On behalf of the Maseru City Council (MCC), the project will establish the city plan for the capital Maseru, addressing sustainable urbanization and efficient development control up to the year 2050. The main project deliverables are: an updated Maseru Spatial Strategic Development Framework / SDF; a Maseru Detailed Urban Plan with detailed zoning; and four action area/sub area plans and urban implementation tools.

Responsible for design, procurement, implementation and maintenance of the project's IT/IS Architecture: deploy a central geodatabase, geoserver, desktop GIS tools, and web application to manage, share, analyse and visualise spatial data for the urban plan. Perform (field) data collection with mobile devices, conversion, clean-up, re-projection (geo-rectification), analysis and visualisation of geographical information, automation of urban and rural development scenarios (e.g. population density), road network calculations, and develop 3D visualisations of local plans.

World Bank / Maseru City Council. Lesotho. 9/2019 - present

SAUDI ARABIA PROPERTY REGISTRATION PROJECT. **IT Expert**

The Government of the Kingdom of Saudi Arabia (KSA) is scaling up their title registration program, including the conversion of its deeds system to a title registration system. The Real Estate General Authority (REGA) has been made responsible, taking over responsibilities for title registration from the Ministry of Justice (MoJ) for the legal aspects and from the Ministry for Municipal and Rural Affairs (MoMRA) for the parcel definition and mapping aspects.

Perform the assessment of the existing IT platform and systems at various institutions and define a way forward, recommendations and proposals for REGA's IT architecture for short and longer term. An interim system will be developed to support the transition of responsibilities for registration from the current responsible institutions to REGA. World Bank / Real Estate General Authority (REGA). Saudi Arabia. 9/2019 – 01/2020

SUSTAINABLE LAND ADMINISTRATION AND MANAGEMENT PROJECT (SLAM). **Senior IT Expert**

The overall objective of the SLAM project is to improve the security of tenure and access to land for the rural poor, thereby improving food security and economic development.

Provision of analytical tools and capacities for sustainable land administration and management at national, regional and chiefdoms levels; mapping of land tenure and land use within pilot area chiefdoms; training on map preparation and interpretation; development of fit-for-purpose land tenure recording systems and tools to facilitate more efficient land administration processes and procedures. These tools include field (spatial) data collection (incl. computer assisted personal interviewing) with mobile devices, synchronised with central server, based on GeoODK, Geoserver, ODK Aggregate server, and QGIS Plugins (python), TileMill/MapboxCSS.

Several Swazi ministries and institutions [EU]. Eswatini (Swaziland). 7/2017 – 8/2019

BOTSWANA NATIONAL SPATIAL PLAN (NSP). **GIS/IT Specialist**

The NSP is a 20-year strategy to influence the distribution of people and activities over Botswana's territory, providing a clear spatial vision to guide future development and investment decisions. The NSP is a spatial development framework (SDF) that influences national, regional, district, urban and rural development plans and strategies.

Responsible for design, procurement, implementation and maintenance of the project IT/IS Architecture: deploy a central geodatabase, geoserver, workflow and document management system, web application to manage, share, analyse and visualise spatial data at national level (~big data), to support data-driven decision-making in planning at various levels. Perform (field) data collection with mobile devices, conversion, clean-up, re-projection (geo-rectification), analysis and visualisation of geographical information, map algebra on orthophotos, remote sensing imagery, automation of urban and rural development scenarios, road network calculations. Perform advanced analysis on combined spatial data on population, land cover, agriculture/food security, soil, census, economy, education, environment, health, transportation/road network and orthophotos. Implementation support and capacity building aimed at national, regional and local planning through a tailored training approach (GIS, planning, mapping, document management).

Ministry of Land Management, Water and Sanitation Services / Department of Town and Country Planning. Botswana. 1/2016 – 12/2018

REVIEW SOLUTIONS FOR OPEN LAND ADMINISTRATION (SOLA) SOFTWARE. **Cadastre and Property Registration IT Consultant**

A considerable investment has been made in developing and field-testing the open source SOLA applications (for land administration and field data collection), which can be customized to local specific requirements.

Perform an independent functional and quality review of the functional scope SOLA in terms of completeness and usefulness. Review the data model and assess compliance with the Land Administration Domain Model [LADM ISO 19152]. Assess the technical quality review of the SOLA source code and system architecture. Assess SOLA's comparative offer for different use cases and explore viable institutional models for managing SOLA cost effectiveness and sustainability in the future.

Food and Agriculture Organization (FAO) of the United Nations. Italy. 9 – 12/2018

SHIRE VALLEY IRRIGATION PROJECT (SVIP). **GIS/IT Specialist**

The objective of the SVIP is to sustainably enhance incomes and hence food security of about 100,000 households in Chikhwawa and Nsanje District.

Procurement and deployment of field data collection equipment such as laptops and tablets to support and facilitate (offline) collection and quality control of spatial and alphanumeric data in the field (incl. computer assisted personal interviewing). CS Pro statistical and census tools. Produce land use mapping, database stored household questionnaires, and interviews.

Ministry of Agriculture, Irrigation and Water Development [WB]. Malawi. 9/2015 – 4/2016

LAND TENURE REGULARISATION (LTR) PROGRAMME. **LIS Software Quality Assurance and ICT Training Expert**

Provide technical support to the RNRA Lands and Mapping Department on several key areas of the Land Administration Information System (LAIS), to develop the technical skills of RNRA IT professionals, enabling them to manage and further develop LAIS.

Provision of technical support regarding data migration and data integrity, and quality assurance, control and testing of LAIS. Design and deliver ICT training modules regarding databases and programming languages used in LAIS (PostgreSQL, Java, Google Web Toolkit, open source software). Provide technical support regarding managerial progress reporting based on LAIS transactions and services (facilitating project Monitoring and Evaluation).

Rwanda Natural Resources Authority [DFID]. Rwanda. 3 – 7/2015

ELECTRIFICATION PROGRAMME. **Information System Design & Development Expert**

The Electrification Programme is aimed at new or improved railways for electrical trains in Denmark. A web based integrated land parcel management application has been developed and deployed regarding the identification and mapping of the properties and right holders, affected by these railway developments, as well as supporting a proper expropriation and compensation process.

Responsible for web application design, development, deployment and change management; regular automatic conversion and migration of (updated) Danish land administration data (OIS).

Rail Net Denmark (Banedanmark). Denmark. 2/2014 – 12/2015

LAND TENURE REGULARISATION (LTR) PROGRAMME. **LIS Data Migration Expert**

Provide technical support to the RNRA Lands and Mapping Department regarding the data migration of 10 million land tenure regularisation records.

Assessment of source and target "big data" models and databases; assess data integrity; develop future migration strategies; develop migration scripts and database stored functions to re-do and enhance previous migrations. Development of an automatic monthly progress reporting function, on behalf of LTR programme log frame indicators.

Rwanda Natural Resources Authority [DFID]. Rwanda. 10 – 12/2014

LAND ADMINISTRATION AND MANAGEMENT PROJECT. **Technical Quality Auditor of IT System Integration Project**

Executing a technical quality audit of the Albanian Land Administration IT architecture & system integration project at the main and the disaster recovery data centres.

A review of various contract and project documents and deliverables was performed, as well as interviews with contract parties, resulting in a report describing the key findings, discrepancies from the contract requirements, and main recommendations for the project work completion. Review system integration and performance (server load balancing, fail-over functions).

Immovable Property Registration Office [WB]. Albania. 7 - 9/2014

SERVICES TO STUDY, ANALYSE AND DESIGN AN INTEGRATED LAND MANAGEMENT INFORMATION SYSTEM AND ENHANCING ACCESSIBILITY OF LAND RECORDS. **IT/GIS Solution Architecture Expert**

Composing bidding documents for the Integrated Land Management Information System (ILMIS).

Writing World Bank bidding documents including: IS/IT Strategy; IT Architecture; Business Process (re)engineering; design, development, customization, build, installation of ILMIS; specification of IT equipment on behalf of data centres, central, and local offices; conversion and migration of paper records; training and knowledge transfer to ILMIS users and administrators; system pilot, roll-out, maintenance and enhancement; estimations and calculations of initial and recurring costs (long term).

Ministry of Lands, Housing, and Human Settlements Development [WB]. Tanzania. 4 - 8/2014

FORMULATION OF THE NATIONAL SPATIAL DEVELOPMENT FRAMEWORK. **Senior IS Development/GIS Expert**

Senior IS Development/GIS Expert for improving the software development environment for the Land Use Planning and Management Information System (LUPMIS).

Providing support to the spatial development framework through the collection, conversion, migration, integration and analysis of spatial and alphanumeric datasets from LUPMIS storage and external sources; planning scenarios for urban and rural development with Envision Tomorrow; creating spatial data architectures ('big data') for land use transitions; data conversion & analysis, re-projection (geo-rectification) and visualisation of geographical information, orthophotos, remote sensing imagery on land use trends, urban and rural development scenarios.

Town and Country Planning Department [WB IDA]. Ghana. 12/2013 – 10/2014

SYSTEMATIC LAND REGULARIZATION IN LESOTHO. **Mapping / GIS Specialist and Production Manager**

The project comprised of the production and quality control of systematic (first) registration data (adjudication records); orthophoto interpretation and vectorisation of general boundaries, establishment of digital cadastral maps of 50,000 parcels; production and distribution of leases to citizens/households.

The design, custom development and deployment of the IT, GIS and workflow management system related to office and field data collection / systematic land titling / registration processes; management of lease production and QC staff; management of subcontractors; regular reporting of project statistics; data quality management, training, iterative development, software generation, conversion and visualisation of geographical information (first registration records / cadastral plans), orthophoto interpretation and vectorisation; support research of project impact, computer assisted personal inter-viewing.

Land Administration Authority [MCC/MCA-Lesotho]. Lesotho. 4/2012 – 11/2013

LAND ADMINISTRATION AND MANAGEMENT PROJECT (LAMP). **Senior Advisor Project Management & IT QA and QC Auditor**

Within the LAMP project, the Computerized Immovable Property System (IPS) is being developed in-house by the client IPRO. The assignment focuses on project management and strategy issues, the definition, supervision, and/or execution of QA/QC tasks regarding software development.

Project and Quality management in iterative software development; IT Architecture and performance (load balancing); re-engineering of land administration processes and procedures, training strategy and training; automatic software source code generation; test strategy and testing; analysis, conversion and visualisation of geographical information (first registration records); harmonisation and exchange regarding National Spatial Data Infrastructure (NSDI); One-Stop-Shop systems; INSPIRE, Land Administration Domain Model.

Immovable Property Registration Office [WB]. Albania. 2/2010 – 4/2012

REVIEW SOLUTIONS FOR OPEN LAND ADMINISTRATION (SOLA) PROJECT. **SOLA Project Auditor**

The SOLA project is a multiyear project to develop open source software for cadastre and registration. A mid-term review of the SOLA project has been executed.

Audit of project management, quality, budget, resources, and progress; iterative software development (method), test strategy, and training strategy.

Food and Agriculture Organization (FAO) of the United Nations. Italy. 11/2011 – 2/2012

CONSULTANCY SERVICES TO IMPROVE THE OPERATIONS OF THE PROPERTY REGISTRIES IN MOZAMBIQUE. **Team Leader / IT Solution Architect**

The project executes the analysis of existing organisation, business processes, laws and regulations, (ICT) systems, data, and human resources, leading to a strategy for organisation, IT system, and legal reform.

Provide detailed specifications for re-engineered modern business processes, property registry IT Architecture, as input to bidding documents. Project Management, information system architecture, process [BPMN] and data analysis, system design, improvement of land administration laws and regulations, Land Administration Domain Model; conversion of analogue data to digital format; the evaluation of bids; supervision of the installation.

Ministry of Finance [ADF]. Mozambique. 10/2009 – 9/2011

THE REAL PROPERTY REGISTRATION AND CADASTRE JOINT INFORMATION SYSTEM (JIS) ESTABLISHMENT PROJECT. **Advisor Project Management & QA/QC Expert**

The project aims to design and develop the JIS for property registration and cadastre. Currently, the JIS is in production in all cadastral and land registry offices in the Republic of Croatia.

Advice and support the project steering committee and management body of the JIS project, regarding the project management and strategy issues, as well as quality assurance and control aspects of the design and development of the Joint Information System (JIS). Software development, training, test strategy and execution, tracks test results and remedies, QC software architecture, configuration and performance (server load balancing), harmonisation/unification of data models, re-engineering of processes and procedures, land laws and regulations, INSPIRE, Land Administration Domain Model, One-Stop-Shop systems, NSDI.

Ministry of Justice, SGA Cadastre [WB]. Croatia. 7/2008 – 6/2010

PROTOTYPE OF THE SOCIAL TENURE DOMAIN MODEL (STDM). **STDM Prototype Design Expert**

The STDM is a specialization of the Land Administration Domain Model (LADM), specifically for developing countries. The prototype is based on a conceptual model, a functional and technical design, and results in a prototype which has been tested in African countries.

System architecture, software and database design; apply LADM and open source software.

ITC / UN Habitat. The Netherlands. 7 – 10/2008

STAGE ONE OF THE DEVELOPMENT OF A LIS. **Team Leader, LIS Software and Database Developer**

The Land Administration Programme (LAP) aims at building a Land Information System (LIS), capable of recording and maintaining basic cadastral and legal information regarding land administration.

Project management, stakeholder relationship management, land registry and cadastre process re-engineering, iterative development, requirements definition, system design, testing, documentation, implementation, maintenance and support, analysis and conversion of (geographical) information, apply the Land Administration Domain Model.

Ministry of Lands, Forestry and Mines [WB IBRD]. Ghana. 1 – 10/2008

ENHANCE THE CADASTRAL MANAGEMENT INFORMATION SYSTEM. **Lead Information System Design Expert**

The extension project to enhance the application CMIS (Cadastral Management Information System, implemented in 2005) with web application interfaces for the Lands and Surveys Department.

Update requirements definition, web information system design and build; management of sub-contractors for web application development, documentation, implementation, training, maintenance and support, analysis and conversion of geographical information.

Lands and Survey Department. Trinidad & Tobago. 5/2007 – 5/2008

SERVICES FOR DATA CONVERSION TO SUPPORT IMPLEMENTATION OF THE CADASTRE AND REAL PROPERTY RIGHTS REGISTRATION SYSTEM IN ROMANIA. **Lead Geographical Information System Development Expert**

The development of production systems, used to track conversion activities regarding geographical data, and deployment of GIS Web applications showing the result of geographical data conversion.

Team and sub-contractor management, iterative development, requirements definition, vectorisation and conversion of geographical information; web application design and build, documentation, implementation, maintenance and support, configuration management.

National Agency for Cadastre & Land Registration [WB]. Romania. 2/2007 – 1/2008

LAND REGISTRATION – PHASE III. **IT Expert Cadastre and Land Registration**

The software Property Rights Register (UzLR) was assessed, with respect to the integration and inclusion of geographical data.

Software assessments and audits; specify data conversion (analogue to digital) methods. Specify a methodology for transferring the existing paper-based land registration records from the traditional Property Rights Register into digital format.

Goskomzemgeodescadastre [EU]. Uzbekistan. 6 – 11/2006

ICT STRATEGY FOR THE REAL PROPERTY REGISTRATION AND CADASTRE JOINT INFORMATION SYSTEM AND LAND DATABASE OF CROATIA. **Project Manager for IT Strategy & Architecture**

Perform an Inception Phase Study to design an ICT strategy and architecture for the Land Registry and Cadastre of Croatia, and create the World Bank bidding documents, based on the accepted ICT/IM strategy.

Project management; creating IS/IT Strategy; cost estimations of initial and recurring costs (total cost of ownership) composing World Bank bidding documents, business process (re-) engineering); comply with INSPIRE and NSDI principles; harmonisation/unification of data models.

Ministry of Justice, SGA Cadastre [WB]. Croatia. 4/2005 – 6/2006

IT SYSTEM UNDER CADASTRE AND LAND REGISTRATION PROJECT. **Cadastre & Land Registration System Test Manager**

Create and implement a strategy for testing the Joint Information System in operation based on the contract, requirements, and design.

Implement test strategy; perform testing, test team management, report recommendations.

National Agency for Cadastre & Land Registration [WB]. Romania. 8/2005 – 5/2006

CONSULTANCY SERVICES FOR THE CREATION, MAINTENANCE AND UPDATING OF PARCEL INDEX MAPS. **Lead Geospatial Database Specialist**

The development of a CMIS (Cadastral Management Information System), including the production of orthophotos and installation of equipment.

Team management; re-design of existing cadastral organization and processes; application design and build; vectorisation of parcels; conversion, mapping, and visualisation of geographical information; training needs assessment; deployment IT equipment; configuration management.

Lands and Survey Department. Trinidad & Tobago. 3/2004 – 6/2005

T-MOBILE (TELECOM) APPLICATION CONFIGURATION MANAGEMENT FOR ORACLE APPLICATIONS. **Configuration & Release Manager**

The implementation of Configuration Management (version control/release management) regarding various Oracle based (web) applications in use at T-Mobile NL.

The definition, planning and implementation of release and configuration management activities, procedures and training; deploy Oracle Software Configuration Manager; execute quality assurance and control/testing of releases and system migrations; maintain IT system architecture descriptions.

T-Mobile (Ben). The Netherlands. 9/2002 – 12/2003

PROJECT AUDIT. **Cadastre IT Project Management Auditor**

Support, monitoring progress and improving Cadastral (IT) project quality, as part of the "Watchdog" projects of the European Committee.

Project management audit, Training, applying CSC Catalyst IT Method.

Geodesy, Cartography and Cadastre Authority [EC]. Slovakia. 6-10/2002

ESTABLISHING A MODEL FOR A CADASTRAL DATABASE IN POLAND. **Team Leader, Cadastre Database Designer**

This project is a continuation of the pilot project "Streamlining the Polish Cadastre" (2000) to make polish cadastral information accessible to various clients of cadastral information via Internet applications (capital Warsaw, the provinces and districts).

The definition of the IS/IT strategy, system requirements definition; selection of proper tools and methods.

GUGIK / Cadastre. Poland. 1-8/2002

METROPOLIS 2010. **Team leader, Application and Database Developer**

The development of an information system for the Cadastre and land & property tax department of the capital of Guatemala, including the allocation and management of operational cadastral staff.

Management of cadastre operations; supporting property tax collection; define IT/IS strategy; application development; data collection and conversion; training, and coaching; system implementation, maintenance.

Municipality of Guatemala / Cadastre. Guatemala. 8/2000 – 7/2001

CADASTRE OPERATIONS MODERNISATION AND AUTOMATION PROJECT (COMAP). **Application Development Manager**

Part of this project was aimed at the development of the Lebanese Cadastral application (ICMSS).

IT strategy, business process re-engineering, information system development; data conversion, system documentation, training, pilot-project, installation of IT equipment, management of sub-contractors.

Ministry of Finance [WB]. Lebanon. 12/1998 – 3/2001

STREAMLINING THE POLISH CADASTRE. **Team Leader, Information System Designer**

The project aims at making polish cadastral information accessible to various clients/users of cadastral information via internet applications (in districts Wloclawek and Kalisz).

The selection of proper development tools and methods, internet application design.

GUGIK / Cadastre. Poland. 7-10/2000

DEVELOP THE 'SISTEMA AUTOMATIZADO CATASTRAL'. **Coach, trainer regarding Information System Development**

The development of the 'Sistema Automatizado Catastral' for Chiquisaca, Bolivia.

Cadastral and software development knowledge transfer to local cadastral and automation experts, support systematic registration, software and database design, prototyping/pilot, data conversion, training.

Cadastre Chiquisaca. Bolivia. 8/1999 – 5/2000

CONSULTANT AND TRAINER FOR CADASTRE AND AUTOMATION. **Coach, trainer Information System Development**
The in-house development of the 'Sistema Información Registro y Catastro' CNR in El Salvador.
Cadastral and software development knowledge transfer to local cadastral and automation experts, coaching, land information system design and build, prototyping, data conversion, training.
Centro Nacional de Registros (CNR). El Salvador. 2 – 6/1997.