

ALEKSANDER MORGADO

Telecommunications Engineer, MSc.
GNU/Linux C development, Senior Engineer

BIRTH DATE: May 6th 1981

NATIONALITY: Spanish

LANGUAGES: Spanish, English, Basque

E-MAIL: aleksander@aleksander.es

WEBSITE: <https://aleksander.es>

BLOG: <http://sigquit.wordpress.com>

EXPERIENCE



FEB 2014 - *Current*

Freelance GNU/Linux C Software Engineer

ALEKSANDER.ES - <https://aleksander.es>

- Development of improvements for ModemManager, libqmi and libmbim.
- Development of custom software for embedded systems.
- General consultancy in Linux-based system setups.
- Keywords: *C*, *GLib*, *DBus*, *ModemManager*, *QMI*, *MBIM*



Nov 2012 - *Current*

The GNOME FOUNDATION is a non-profit organization that helps to create a free software computing platform for the general public.

- <http://www.gnome.org/foundation>

GNU/Linux C Software Engineer (Desktop and Mobile)

[LANEDO GMBH](http://www.lanedo.com) - <http://www.lanedo.com>

- ([Google Inc.](#)) Development of 3GPP2 SMS messaging support, CDMA activation and OMA-DM support in libqmi and ModemManager.
- ([IMS Company, Zodiac Aerospace](#)) Development of QMI (Qualcomm MSM Interface) based connection manager for in-flight entertainment system.
- ([Lanedo GmbH](#)) Development of libmbim and support of MBIM (Mobile Broadband Interface Model) protocol based 2G/3G/4G modems in ModemManager.
- ([Google Inc.](#)) Development of libqmi and support of QMI (Qualcomm MSM Interface) protocol based 2G/3G/4G modems in ModemManager.
- ([Hautespote Networks](#)) Support of QMI (Qualcomm MSM Interface) protocol based 4G (eHRPD, LTE) modems in OpenWRT.
- ([Google Inc.](#)) ModemManager core development, port to GDBus and 4G (LTE) multimode device support.
- ([Ammonit Measurement GmbH](#)) ModemManager improvement to support Wavecom, Cinterion, Siemens and Iridium (satellite) modems
- ([Nokia Corporation](#)) Development of the Content Manager software (GNOME Tracker) for the MeeGo Harmattan operating system.
- Keywords: *C*, *GLib*, *GObject*, *DBus*, *MeeGo*, *ModemManager*, *LTE*, *QMI*, *MBIM*, *Gobi*



APR 2010 - JAN 2014



MAR 2008 - MAR 2010

GNU/Linux C Software Engineer (Telecommunications)

AZETTI NETWORKS - <http://www.azetti.com>

- Project manager for a team of 5 people.
- Complete design of the Open Mobile Alliance (OMA) compliant Push-to-Talk over Cellular (PoC) server, a highly-scalable and distributed Voice-over-IP based system for half-duplex group communications.
- Development of the SIP protocol manager, Registry Server and most lower level common libraries in the system.
- Keywords: *C, GLib, GObject, TCP, UDP, IP, VoIP, SIP, RTP, XCAP, libpcap, Sofia-SIP, GNU oSIP*

GNU/Linux C Software Engineer (Space, Ground Segment)

ELECNOR DEIMOS - <http://elecnor-deimos.com>

- Design and Development manager of the Experimental Offline Analysis Tool/ODTS (Orbit determination system for the European Galileo satellite navigation system)
- Software design of the preprocessing and postprocessing tasks, including the development of the cycle slip detection algorithm, clock bias steering and processing of GPS/Galileo navigation messages to obtain satellite positions, velocities and clock biases.
- Keywords: *C, Orbit determination, Rinex/Obs, Rinex/Nav, Rinex/Clk, SP3-c, Normal Point (SLR), Sinex, Sinex-Tro*



JUN 2006 - MAY 2008



JUN 2005 - JUN 2006

GNU/Linux C Software Engineer (Network security)

PANDA SECURITY - <http://www.pandasecurity.com>

- 9 months at the PANDA GATEDEFENDER PERFORMA security appliances project, developing new features in different modules (SNMP agent, Configuration Manager, Upgrade Manager, License Manager, Stats Manager, LiveDVD installation).
- 4 months at the PANDA DESKTOP SECURE FOR LINUX project, implementing the ARTE unit-testing framework.
- Keywords: *C, C++, GLib, Antivirus, Antispam, Security*

EDUCATION

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| 1999-2005 | Telecommunications Engineering (MSc)
UNIVERSITY OF THE BASQUE COUNTRY (UPV-EHU) - http://www.ehu.es
Bilbao, Spain |
| AUG. 2007 | International SatNEx Summer School
Satellite Communications Network of Excellence
Pisa, Italy |
| JUL. 2006 | ESA/FFG Summer School Alpbach
<i>Monitoring of natural hazards from space</i>
European Space Agency & Austrian Aeronautics and Space Agency
Alpbach, Austria |

- SEP. 2005 | [European Radio Interferometry School \(ERIS\)](#)
University of Manchester and Jodrell Bank Observatory
Manchester, United Kingdom
- SEP. 2004 | [National Virtual Observatory Software Development Summer School \(NVOSS\)](#)
Grant from the National Science Foundation (NSF) and NASA
Aspen, USA

SKILLS & INTERESTS

GNU/LINUX

- Professional C software development
- GNOME and freedesktop.org technologies
- Multi-Process, Multi-Threaded, Clustered applications
- IPC & thread synchronization
- GLib, GIO, GObject, DBus...
- GNU Autotools (Autoconf, Automake, Libtool...), pkg-config
- GCC, GDB, Valgrind, ElectricFence
- XML, XSLT, XSD, XPath, libxml
- Python & Shell scripting

NETWORK

- IP, ICMP, TCP, UDP
- HTTP, POP3, IMAP, SMTP, SNMP, SIP, RTP, RTCP
- Wireshark/Ethereal, tcpdump, libpcap
- High-Availability setups, interface bondings, DRBD, Heartbeat
- Mobile broadband communications (GSM/GPRS/EDGE, UMTS/HSPA, LTE...)

OTHER

- Git, Bazaar, Subversion, CVS
- UNICODE standard
- SQL and SPARQL languages
- Qualcomm MSM interface (QMI) protocol
- Mobile Broadband Interface Model (MBIM) protocol
- PDF/ISO32000 (Portable Document Format) reference
- PDS (JPL Planetary Data System) reference
- Debian and RPM packaging
- \LaTeX

TECHNICAL PUBLICATIONS

- FEB, 2010 | Understanding Valgrind memory leak reports
- <http://es.gnu.org/~aleksander/valgrind/valgrind-memcheck.pdf>
 - A. Morgado, released under GFDL 1.3

SCIENCE PUBLICATIONS

- APR, 2010 | [The International Outer Planets Watch Atmospheres Node database of Giant Planets images](#)
- *Planetary and Space Science, Volume 58, Issue 10*
 - R. Hueso, J. Legarreta, S. Pérez-Hoyos, J.F. Rojas, A. Sánchez-Lavega and A. Morgado
- SEP, 2006 | [Phase dispersion relation of the 5-micron hot spot wave from a long-term study of Jupiter in the visible](#)
- *J. Geophys. Res., 111, E09010, doi:10.1029/2005JE002653.*
 - J. Arregi, J. F. Rojas, A. Sanchez-Lavega, and A. Morgado
- SEP, 2005 | [PVOL: The Planetary Virtual Observatory and Laboratory](#)
- *31th NASA-DPS Meeting. Cambridge, UK.*
 - A. Morgado, A. Sanchez-Lavega, J.F. Rojas, R. Hueso

TALKS AT CONFERENCES

- FEB, 2014 | [FOSDEM \(Brussels, Belgium\)](#)
- [LTE in your Linux-based system](#)
- OCT, 2013 | [GUADEC-ES \(Madrid, Spain\)](#)
- [Introducción a D-Bus \(Spanish\)](#)
- AUG, 2013 | [GUADEC \(Brno, Czech Republic\)](#)
- [The ways of Tracker](#)
- FEB, 2013 | [FOSDEM \(Brussels, Belgium\)](#)
- [So your mobile broadband modem speaks what?](#)
- JUN, 2012 | [GNOME Asia \(Hong Kong\):](#)
- [ModemManager revamped: now supporting LTE/4G modems](#)
 - [An introduction to Tracker, SPARQL and whatnot](#)
- FEB, 2012 | [FOSDEM \(Brussels, Belgium\)](#)
- [LTE is here, and ModemManager is \(almost\) ready for it](#)

FREE OPEN SOURCE SOFTWARE PROJECTS

Detailed profiles with all my free and open source software contributions available at:

- OHLOH: http://www.ohloh.net/accounts/aleksander_morgado
- LAUNCHPAD: <https://launchpad.net/~aleksander-m>



MODEMMANAGER is a DBus-activated daemon in charge of managing mobile broadband modems (2G, 3G, 4G), used by default in most GNU/Linux distributions.

- *Co-maintainer and developer*
- Keywords: C, GLib, DBus, AT, QMI, MBIM, GSM, GPRS, UMTS, HSPA, LTE, CDMA, EV-DO
- <http://www.freedesktop.org/wiki/Software/ModemManager>



LIBQMI is a GLib-based library for talking to WWAN modems and devices which speak the Qualcomm MSM Interface (QMI) protocol.

- *Co-maintainer and developer*
- Keywords: C, GLib, QMI, Gobi
- <http://www.freedesktop.org/wiki/Software/libqmi>



LIBMBIM is a GLib-based library for talking to WWAN modems and devices which speak the Mobile Broadband Interface Model (MBIM) protocol.

- *Co-maintainer and developer*
- Keywords: C, GLib, MBIM
- <http://www.freedesktop.org/wiki/Software/libmbim>



TRACKER is a semantic data storage for desktop and mobile devices, which uses SPARQL and RDF ontologies.

- *Core developer*
- Keywords: C, GLib, DBus, SPARQL, RDF, Nepomuk
- <http://www.gnome.org/projects/tracker>

WEB SOFTWARE PROJECTS



The PLANETARY VIRTUAL OBSERVATORY AND LABORATORY is a JSP-based web application for the remote management of the planetary image database from the International Outer Planets Watch framework (IOPW)

- *Original developer*
- Keywords: Java, JSP, Apache, Tomcat, MySQL
- Up and running since November 2004
- <http://www.pvol.ehu.es>