

Aeronautic Systems and Software Engineer

Frédéric Blanchet-Momas

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Birth date & place: 08/01/1976 Lourdes (France), French nationality

Currently employer Viveris Company: <http://www.viveris.fr>

SUMMARY

Aeronautic Engineer with 22 years of experience in software development and system integration. Specialized in GNU/Linux Operating System and IP Communications. Used to working in an international context especially US and Indian partners, able to assist you in your projects as technical expert, scrum master, software development, customer support or bid response.

TECHNICAL SKILLS

Operating systems

GNU/Linux (Kernel, networks administration, development), UNIX (SOLARIS, AIX), real time (RTAI, RTLinux, Red Hawk), POSIX.

Languages

C, C++, Python, Ruby, JAVA/J2EE, Perl, Shell Script, HTML5 and XML, Javascript.

Networks

TCP/IP, Ethernet, ATM, FireWall, VPN, Radius, CISCO, AFDX, GSM/UMTS/4G/5G

Unix Server

Apache, Samba, Sendmail, openLdap, proFTP, Mail Server, rSync, SSH, Jabberd, J2EE, ...

GNU Tools Chain

GCC, CVS, subversion, gdb, Cross Compilation (ARM, PPC), Cmake, lint, gprof, valgrind...

Other

UML, QEMU (internal architecture), Cryptography, Open source licensing usage, DO178 E, Doors, Agility (SAFe), JIRA, ROBOTS framework, GIT.

PERSONAL SKILLS

- Autonomous and team player
- High technical level in industrial data processing
- Resourceful / adaptive
- Good communication and presentation skills
- Customer relationship management

EDUCATION

2000 D.E.S.S. A.E.I.I.

Automatique, Electronique, Informatique Industrielles - University of Caen

Control theory, Electrical engineering, Computer science

Graduation European master: 5 years post A level / Master

1999 Maîtrise E.E.A.

Electronique, Electrotechnique, Automatique - University of Toulouse

Electronics, Electrical engineering, Control theory

LANGUAGES

French, English

WORK EXPERIENCE

Working since 2000 for the Viveris company and providing service for the aerospace company. Since September 2007, I have been assigned to the Rockwell Collins office in Blagnac, where I am in charge of some Networking/ Cellular Development and Integration project.

References available upon request.

2007-2022 Rockwell-Collins

15 years

- **InteliSight**

Member of the development team for InteliSight project. Topics: NAS service for IPAD solution A834 NAS, Traffic apps data presentation, Acars Over IP. I hold the Scrum Master Role.

InteliSight is an Aircraft Interface Device (AID), a hardware systems that enable the interface between an electronic flight bag (EFB) and the aircraft data bus.

<https://www.collinsaerospace.com/what-we-do/industries/commercial-aviation/connected-cockpit/intelisight>

Tools: C++ Application, JSON, A753, A834, A429, JIRA, Python, ROBOTS framework, VPN

Working groups of 8 people in US, France and India.

- **Collins Aerospace IRT-NX SATCOM**

Member of the development team for Collins Aerospace IRT-NX SATCOM project. I held the Scrum Master Role for the AcarsOverlp team.

Solution for Acars Over Ip with Safety constraint with Iridium-Next satcom service

<http://www.collinsaerospace.com/what-we-do/industries/commercial-aviation/flight-deck/communications/satcom/irt-4xx0-next-generation-iridium-satcom-system>

<https://www.iridium.com/blog/iridium-next-review>

Tools: C++ Application, Acars, Arinc 753, JAMA, Python, VPN,

Working groups of 7 people mainly based in Melbourne Florida US (remote work), global project of 30 people.

- **IWACS, 4G/WiFi connection for IMO A350**

Project leader, scrum master, technical expert and customer support for the IWACS project.

The IWACS is a solution that allows the A350 aircraft to establish a WiFi (5GHz capability), Cellular (3G or 4G/LTE, multiple SIM) with the airport. These connections are used for the transfer of the maintenance data for Airline and [Skywise](#).

Tools: C++ Application, JIRA, QMI 4G, WiFi protocol, Skywise

Working groups of 8 people on IWACS project

- **FOMAX as *Flight Operations and MA*intenance *eX*changer for A320Neo**

Participation to development for FOMAX project.

<https://www.rockwellcollins.com/Data/News/2017-Cal-Yr/CS/20170621-FOMAX.aspx>

Usage of VPN for dataloading with VPN for Airline or Skywise use.

<https://www.usinenouvelle.com/article/avec-skywise-airbus-lance-l-internet-des-avions.N618963>

Tools: C++ Application, JIRA, Python, ROBOTS framework, VPN, Skywise

Working groups of 7 people on FOMAX team. (Global project of 70 people)

- **3G/4G Cellular Link dev for A350**

Upgrade and evolution of the TGCU IP aeronautic box used for IP connectivity between aircraft and ground during airport phase.

Tools: PC104, DO178B E, Embedded Linux, 3G/4G, QMI, Agility, JIRA

Working groups of 4 people

- **“OSF A350” INTEGRATION**

Member of the Integration team, especially for the all IP connectivity (WIFI, CELLULAR 3G, WIRED, authentication). The OSF as (**O**penworld **S**erver **F**unction) is an avionic cabinet dedicated to host several avionic applications on A350 aircraft

All equipments are developed in India and specified at Cedar rapids US or Toulouse FR. Integration and validation done in Toulouse and integrated on the OSF equipment. Final OSF and WACS equipment are delivered to Airbus Hamburg Germany.

Working groups of a maximum of 120 people.

- **MCMS as Mobile Connectivity Showroom**

Technical and project leading for European research network project

Part 1 : Set up of a showroom dedicated to customer presentation of new connectivity technology in aeronautics industry.

Part 2: Management of several European/French research projects and preparation the IMACS project for Rockwell Collins. Definition of a new protocol between mobile subsystem and ground subsystem to interconnect nomad network (like an aircraft)

Part 3: IMACS A350: support the Rockwell Collins proposal and bid, as well as system architecture and technical expertise. This equipment is a distributed system with A350 aircraft and ground software components on different locations to enable application communication between aircraft and ground.

Working groups of 3 to 10 people.

- **UMTS2100**

Expertise for embedded Linux technology use and kernel development.

UMTS2100 was a new IP aeronautic box used for IP connectivity between aircraft and ground during airport phase

This box establishes private network over UMTS, GSM or WIFI links.

Tools: PC104, DO178B E, Embedded Linux, GSM/UMTS, VPN

Working groups of 4 people

2006-2007 EADS

18 months

Technical expert on industrial card for EADS

- Assistance and expertise for Airbus avionic tools (A320, A340, A380, A400M) migration from lynxOS to real time Linux PPC. The new card is a Freescale MVME 5500 (Motorola product). The migration forces a reorganization of simulation tools. A new classical Ethernet/IP/UDP network replaces proprietary bus used for simulated data transport.
- Project lead for adding support for CDC protocol (Ethernet over USB) to QEMU source software (full virtualization). Several corrections onto USB support on QEMU.

Tools: C, Linux PPC kernel, Ethernet, QEMU, C, USB, CDC- Ethernet.

Working groups of 6 people

2004 – 2005 Alcatel Broadband services : "DSL in-the-Sky"

24 months

DSL in the sky is an Internet satellite communication generation by DVB S2 protocol.

<https://artes.esa.int/projects/dsl-sky>

I developed:

- The forward tools run on real-time Linux platform. In order to create the waveform in MPEG stream with the terrestrial traffic, encrypted by AES broadcom card from ATM interface.

- The authentication sub system. It gives permission and calculates resources for satellites communications. The subsystem is fully redundant (data and network) with high availability.

Tools: C, Red Hawk Linux, POSIX, ATM, Ethernet, IP-Network, MPEG TL, Cryptography

Testing Tools: Smartbit 2000, Riverstone router and traffic network soft generator, Spirent AX 4000

Global Working groups of 40 people

MPDS - RBGAN - France Telecom/ Inmarsat Satellite

20 months

I held the project technical responsibility for the development of Several satellite communication service

- MPDS : satellite communication service by France Telecom/Inmarsat in 2000
- RBGAN: New satellite communication service by France Telecom/Inmarsat in 2003

https://en.wikipedia.org/wiki/Broadband_Global_Area_Network

Authentication service by Radius Server (GNU Radius) stored on Postgres SQL.

Data management by new distributed specific methods. Administrative tools on Apache Server and PHP languages, running on SOAP/service.

Definition of security rules strategy (IPTable library filter).

Tools: C, shell script (Bash), Sun SOLARIS, Linux, Radius, VPN, Apache/PHP, Postgres SQL.

Working groups of 6 people

Aérospatiale Matra / Airbus

16 months

Research and study for the new avionic networks [AFDX](#) developing for A380 plane in 2001-2002

Conception and development of one model based on real time Linux (choosing OS), for experimentation on network abilities.

- Writing a specific Ethernet driver.
- Writing a communication stack (MAC / TCP-UDP / GUI).
- Developing of AFDX Ethernet analysis

Tools: Linux RTAI (scheduler, POSIX thread, memory, stack, real time), C, PERL, PCI bus, Ethernet & switch (MAC/IP/UDP), SNMP, TFTP, gateway, GNU tools chains (CVS, make, egcs), GNOME/GTK.

Working groups of 2 people

HOBBIES / INTERESTS

Cooking, pastries, artwork

Sport: Ski/Telemark, bike riding, golf.