Gianni Pucillo

## Skill and Knowledge of C language and Assembler

*Reverse order history:*

Finally, for my **Term3D**, **VisProject**, **PCRemote** and **PCAnalyze** applications, I used x86 assembler extensively for dedicated math functions, function calls, I/O boards (such Intel 8255), I/O interrupts and DMA handling (such ATDIO-32F by National Instruments).

I made a wider use of Assembler in the **µC/OSII** RTOS, for the **Rabbit Semiconductor R3000 microprocessor** with DynamicC IDE available on LP3500 and RCM3700 SBCs.
Though the MON186 developing environment was basically in C language, Falcom intelligent GSM equipped with AMD186 was improved with some Assembler functions.

During this period I developed a **Video Timing Parameterization** application (Philips, Milano). This was written in C language and Assembler (under DOS Extender OS) for S3 graphic chipset and MGA Matrox chipset too. The application was committed to handle analog signals and to drive video timing parameters.

At the beginning of my freelance activities, I wrote **graphic display drivers** for Crystal Graphics (Santa Clara, California, *March* and *July* congratulation fax), Nemetschek (Munich, Germany), Halo (Silver Spring, Maryland). I introduced lines of code in Assembler to speed up particular MGA registry functions.

During the transition from full time employee (link to employer reference letter) to freelance consultant (also looking to be hired at Matrox in Canada), I developed a **2D SDK graphic library** and **real-time graphic CLI, script language and command interpreter**, running under DOS, DOS Extender and LynxOS. The library was developed for the Matrox MGA series graphic microprocessor (Titan, Athlas, Dubic, Athena, Storm, MGA-2064W formally Millennium), and was written in C and Intel x86 Assembler.
This library was customized for the company Sipar (Trento – Italy) and used in their **high speed image transfer** project, running on LynxOS, with two MGA Millennium boards installed.
Gilardoni also used the same library for its **X-ray digital image representation** project, to graphically diplay captured images at high speed.

When I was a product manager at Matrox (link to appreciation fax), I acquired experience in C language and Intel x86 assembler (in DOS and Microsoft Windows) by **supporting application developers**. C language became the principal language, while Assembler still helps to speed up some critical functions and real-time event handling.

With the **MOS Technology 6502** I wrote embedded software for industrial machines driven by micro-computers such as three-roller sheet metal calender, ultrasonic plastic welding machines, X-ray photographs motorized slider, keyboards firmware.

I learned **Assembler** at school, inseparable companion of the Digital Electronics course. I have had a passion for Assembler language.

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