

Dear Mr. Gregory,

I am writing to you because out of all members of TI's leadership team listed on your corporate website, you appear to be the closest one to the apparently-disbanded Wireless Terminal Chipset Business Unit, hence I reasoned that you are probably the best person to approach.

My name is Mychaela Falconia, and I am a freelance telecommunications engineer, doing both software and board-level hardware. I am also a very strong admirer of the Calypso chipset for GSM/2G which TI produced about 15 years ago, and this Calypso chipset (or more precisely, the software or firmware suite associated with it) is the subject of my present outreach to TI. But I am not writing to you solely on my own behalf — instead I am making this inquiry on behalf of the entire worldwide free and open source software community. Our FOSS community has been hurting for quite a few years now because of the lack of a FOSS GSM baseband processor solution: since TI's exit from the GSM baseband chipset business, that market has been taken over by MTK, Spreadtrum and RDA, and all of those Chinese/Taiwanese companies are extremely closed. If a student wishes to understand how GSM really works in a practical handset or modem, she cannot just go to MTK or Spreadtrum or RDA and download their reference schematics and firmware source code — those companies publish almost nothing, and even their primary customers (Chinese manufacturers of phone handsets and packaged modem modules) get extremely poor documentation and firmware deliveries in mostly binary form, almost no source.

But the firmware source and chip documentation situation is much better for your old Calypso chipset, which is why I am reaching out to TI. By searching around the Internet, I have been able to find very detailed technical documentation for all 3 chips (Calypso, Iota and Rita) which comprise the chipset solution in question, as well as your Leonardo reference board schematics which show how these chips need to be interconnected. I was also able to find what may perhaps be the world's last surviving copy of your TCS2.1.1 (TCS211 for short) official software or firmware suite for this chipset platform; the version I got was originally about 60% blobs (linkable binary objects with no corresponding source), but through a few years of painstaking work, lifting pieces of code from other TI firmware versions found on the Internet (mostly LoCosto) and massaging them to match the Calypso version, I have been able to reconstruct Calypso TCS211 firmware in 98% source form. I have also designed and successfully built my own Calypso development board (FCDEV3B, see project website www.freecalypso.org) that is a semi-clone of your historical Leonardo board — I have access to a very large surplus of TI-made Calypso, Iota and Rita chips, as well as all other needed components from that time period, and all of these components have been proven good in the course of this FreeCalypso board project.

This FreeCalypso board and the associated suite of tools (I wrote my own from-scratch replacements for most of your WTCBU development tools) now gives the worldwide FOSS community something that we've been sorely lacking for over a decade: a practically usable, production quality GSM/2G mobile station implementation with fully published source code and documentation, such that any interested party (students, researchers, empowered end users) can study and understand how it works. However, we still have two little remaining problems which do not appear to be resolvable without getting a little bit of benevolence from TI, which is why I am reaching out to you:

1. For our reconstruction of your TCS211 firmware, we are using fragments of TI source and object code which were found freely on the Internet — but none of these Internet finds were accompanied by any kind of permissive license. For this reason my work is being decried as illegal or pirate, and is unfortunately ostracized by a large fraction of the FOSS community, the same people who could otherwise greatly benefit from this work if they weren't turned off by the lack-of-license situation. To the best of my IANAL understanding, this problematic situation can only be resolved by an act of benevolence on the part of TI, namely, if you would officially release the code in question under some kind of permissive license, such as the BSD license for example. Perhaps you could do something similar for Calypso TCS211 firmware as what Caldera did for Ancient UNIX back in 2002? Please see the enclosed 2002 Caldera letter for what I mean.
2. Even though I have successfully reconstructed the missing source for over 98% of the total firmware suite, 10 small source modules are still missing. The 10 missing files are `os_com.c`, `os_drv.c`, `os_evt.c`, `os_isr.c`, `os_mem.c`, `os_mis.c`, `os_pro.c`, `os_sem.c`, `os_tim.c` and `osx.c`. The `os_???.c` modules form a very thin glue layer between GPF and Nucleus, whereas `osx.c` is an even thinner glue layer between GPF and L1. In the case of the Nucleus PLUS RTOS itself (the only component of our reconstructed TCS211 firmware which is owned by someone other than TI) we already have a full source version of non-TI origin (i.e.,

completely independent of TI, thus we could negotiate directly with Mentor Graphics regarding its license status), but because we lack the source for the `os_???.c` glue layer, we are currently forced to use these modules in object form, tying us not only to TI's old proprietary compiler, but also to an older version of Nucleus compiled by TI, needlessly complicating the license situation.

If we could get those missing `os_???.c` and `osx.c` source files, we would immediately switch from the old TI-licensed version of Nucleus to our own TI-independent version, simplifying this aspect of the license situation, and the gate will be opened to work on migrating from your old proprietary compiler to modern `gcc`, thereby removing one more TI proprietary component from the picture. But I have not been able to find those last 10 missing files anywhere on the Internet, thus I reason that if they exist anywhere at all, that place can only be in TI's deep archives related to closed-down business units. We as a community thus appeal to your benevolence: only you have the power to direct your corporate archivists to dig in some very old and dusty archives and pull those 10 files from some very old tape. Please note that these 10 source modules are part of GPF, thus they should be present in every WTCBU program, both 2G and 3G, not just Calypso.

I would greatly appreciate any and all kind of earnest dialogue or communication with TI on this topic. The best way to reach me is via email: mychaela.falconia@gmail.com, and I look forward to hearing back from you. Sincerely,

Mychaela Falconia, she/her/hers,
FreeCalypso project leader
www.freecalypso.org