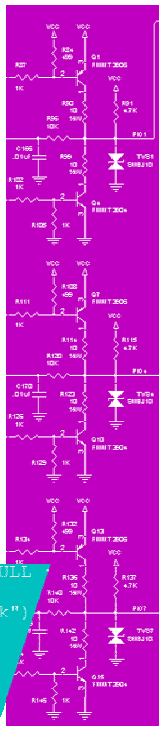
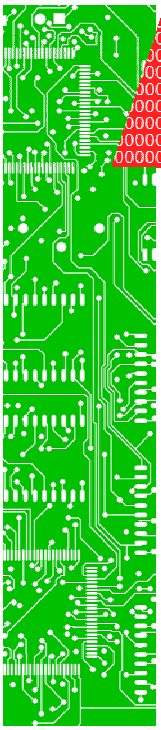
Mark Bereit

For nearly thirty years,
applying technical skills, creativity and passion
to product development



```
Out = m_pfgSrc->GetPin(pTee, PINDIR_OUTPUT, gbAltPreview ? NULL
  "Capture");
fVSink = m_pfgSrc->GetFilter(CLSID_IrisQueueSink, L"Queue Sink");
bQS2 = (IIrisQueueSink2 *)m_pfgSrc->GetInterface(m_pfVSink,
   IID_IIrisQueueSink2);
PinIn = m_pfgSrc->GetPin(m_pfVSink, PINDIR_INPUT);
m_pfgSrc->ConnectDirect(pPinOut, pPinIn);
pPinOut = m_pfgSrc->GetPin(pTee, PINDIR_OUTPUT, gbAltPreview ?
```



```
0000: 00 00 00 20 66 74 79 70-6D 70 34 32 00 00 00 00   ... ftypmp42....
0010: 6D 70 34 31 6D 70 32 32-69 73 6F 6D 00 00 00 00   mp41mp42isom....
0020: 00 00 BD 55 6D 6F 76-00 00 00 6C 6D 76 68 64   ...Umoov...lmvhd
0030: 00 00 00 00 C7 14 C4 26-C7 14 C4 26 00 01 5F 90   .....Ç.Ä&Ç.Ä&.._.
0040: 00 BD ED 18 00 01 00 00-01 00 00 00 00 00 00 00   ..............
0050: 00 00 00 00 00 01 00 00-00 00 00 00 00 00 00 00   ..............
0060: 00 00 00 00 00 01 00 00-00 00 00 00 00 00 00 00   ..............
0070: 00 00 00 00 40 00 00 00-00 00 00 00 00 00 00 00   ....@...........
0080: 00 00 00 03 00 00 4D C7 74 72 61 6B 00 00 00 5C   ......M.trak...
```

www.MarkBereit.com

Significant Projects

GainMaker® transponder

2013: new generation of firmware for DOCSIS status monitoring transponder.
My role: sole developer of device-specific status monitoring code (C++), adapt existing code libraries to new chipset/environment

Network Tracker Plus™

2011: advanced remote measurement tool for HFC cable TV plants
My role: firmware project leader (C++), assist in hardware design/checkout, documentation preparation for CableLabs certification

Landro® play analyzer Personal Edition

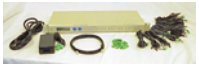
2006-2010: family of video playback, tagging and retrieval software for Windows Vista®.
My role: sole developer of application code (C++), DirectShow® components, most documentation, some training videos

Landro StudySite™

2007-2009: Internet-based video posting/exchange/retrieval service; originally a client application, later switched to open web browser client model.
My role: manage overseas development of client application, integration with Landro software; later, sole developer of web browser version (primarily IIS extensions in C++, with JavaScript, Ajax and SQL)

Otto Playback Director™

2005-2008: scheduled video playback appliance hardware with networked PC applications.
My role: adapt existing DVR code for appliance (embedded Windows® XP); sole developer of client GUI (C++); documentation



SmartPort™ Controllers

2001-2005: line of device controllers for infrared, serial (RS-232/RS-422), logic level and relay equipment control.
My role: circuit design/testing; some PCB layout; team leader for firmware and client software

VideoTizer®

2000-2005: professional DVR with video tagging and retrieval; optional network control capability.
My role: assist in circuit design/testing, portions of firmware development (embedded Linux); team leader for network control applications and integration with device management systems

SDS (Signal Detection Switch)

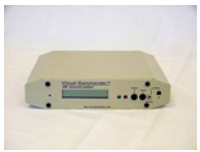
2000-2005: series of modular, rack-mounted signal monitoring and switch devices for broadcasters.
My role: designed CPU card core; assisted in MCU designs for modules; some PCB layout; team leader for firmware for modules and integration with device management systems

iNED™ servers

1999-2008: three generations of device control network server appliances.
My role: most circuit design/testing; minor PCB layout work; team leader for development of firmware and embedded OS; assist in FCC approval testing; some mechanical design, documentation

Video Commander® Professional Edition

1999-2008: industry leading graphical software system for easy routing, scheduling, signal management and device control.
My role: team leader for all system and software design, development and testing



CX-IR8

1998-2003: infrared device controller hardware
My role: circuit design; PCB layout; team leader for firmware.
development and integration with device routing software

MicroLok® II

1997-1998: contract development of setup/diagnostics utility for safety-critical rail controller for Union Switch & Signal (now Ansaldo STS USA).
My role: team leader for utility software development; technical interaction with MicroLok developer team

Gas detection equipment

1996-1998: contract development of updates for AutoStep® and RIS® optical gas detection equipment for Bacharach, Inc.
My role: lead developer to document and update existing assembly language firmware for new functionality

Signal Routers

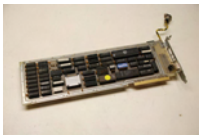
1994-2005: four generations of video/audio signal routing hardware for software control.
My role: team leader for firmware development; design communications protocols; some MCU circuit design

Video Commander 3

1992-1999: first Windows software for graphical signal routing, device control and scheduling.
My role: original developer, adapting concepts from original MS-DOS product; team leader throughout product lifespan

MicroTest

1988-1989: system diagnostics and test software for MS-DOS PCs.
My role: sole developer; testing; documentation



Multi-user extension card

1987-1988: proof-of-concept prototype of MS-DOS PC on a card.
My role: circuit design and prototype; PLD design; code BIOS and host communications software

CP/M port

1986: proof-of-concept port of CP/M 3.0 to WordPlex word processor hardware to emulate Sulcus computer systems.
My role: write BIOS including terminal emulation; minor circuit work

Telecom

1985-1987: two applications for serial line / modem communications and terminal emulation.
My role: sole developer (assembly language); documentation

BBB-1

1982-1983: high school project by three students to design and build a personal computer from scratch: Z80 core, 64K dynamic RAM, keyboard, 64x25 text video display to TV, sound, cassette interface.
My role: assist in CPU core design/construction; designed video display; wrote BASIC interpreter and BIOS in assembly language

Experience

Languages

C++
C
HTML + CSS
JavaScript®
BASIC
SQL
Visual Basic®
Objective-C®
C#

Assembly Languages

x86
ColdFire®
Z80
8051
68HC08
MIPS®

Development Tools / Environments

Visual Studio® 2008, 2010, 2012
Visual Studio 6
NetBeans
CVS
Visual SourceSafe®
gcc
Diab™ C/C++
IAR Embedded Workbench
XCode®
Eclipse™
Inno Setup

Circuit Design Tools

OrCAD®
Protel® PCB
Altium Designer®
VHDL

Multimedia Tools

Paint Shop Pro®
Adobe® Dreamweaver®
Adobe Photoshop®
iMovie®
Final Cut® Express
Pinnacle Studio™

Documentation Tools

Microsoft Office
Adobe PageMaker®
RoboHelp®

Desktop Operating Systems

Microsoft Windows: 8, 7, Vista, XP, 2000, 98, 95, 3.11, 3.1
Linux: Ubuntu, Red Hat, Monta Vista
Mac OS X
MS-DOS
Unix

Published Articles

"The Power of Flash," *Circuit Cellar*, January 2007
"Escape the Software Development Paradigm Trap," *Embedded Systems Design*, May 2006

Public Presentations

Session presenter, "Embedded Web Servers as User Interface," Embedded Systems Conference, Boston MA, October 2008
Speaker and panelist, "Combinatorial Software: Applying Silicon Design Technology to Produce Fail-safe, Modular Software," Telecosm (George Gilder/Steve Forbes investment conference), Lake Tahoe CA, October 2006

Employment History

Jul 2010—present: Manager of Embedded Development, **Cheetah Technologies**
Manage hardware / firmware product development for status monitoring product line; lead firmware developer
C++ • HTML • CSS •JavaScript • eCOS • Linux • SNMP • embedded • hardware

Oct 1998—Feb 2010: Director of Product Development, **IRIS Technologies**
Lead developer or collaborator on numerous software and circuit design projects; also managed a development team from 1998 until staffing cut-backs in 2005
C++ • C • SQL • HTML • JavaScript • Assembly • VHDL • Win32 • Linux • embedded • MFC • hardware

May 1992—Sep 1998: Owner / Project Lead, **Breakthrough Designs**
Started a technology product development business working for several Pennsylvania businesses; hired and managed a small staff; closed business when I and my entire team were hired by our biggest client
C++ • C • Assembly • Win32 • MFC • embedded • hardware

Sep 1989—Apr 1992: Programmer / IT, **Helicopter Aviation Services**
Developed internal sales database applications and supported company network, computer systems and users; also involved in documentation for a project to obtain FAA approval for a new helicopter accessory
C • C++ • Visual Basic • Btrieve • Windows 3.1 • MS-DOS • Novell

Jun 1988—Aug 1989: Lead Software Developer, **Micro Tech Resources**
Developed software applications for sale; collaborated in development of industrial robotics technology and PCB contract assembly/testing work
C • Assembly • MS-DOS • hardware

Jun 1984—May 1988: Assembly Language / Systems Programmer, **Sulcus Computer Corp.**
Developer for low-level routines in assembly language, CBASIC and C supporting the applications development team; also carried out several internal proof-of-concept projects
Assembly • C • CBASIC • MS-DOS • CP/M • TurboDOS

Contact Information

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mark@markbereit.com - http://www.markbereit.com

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