

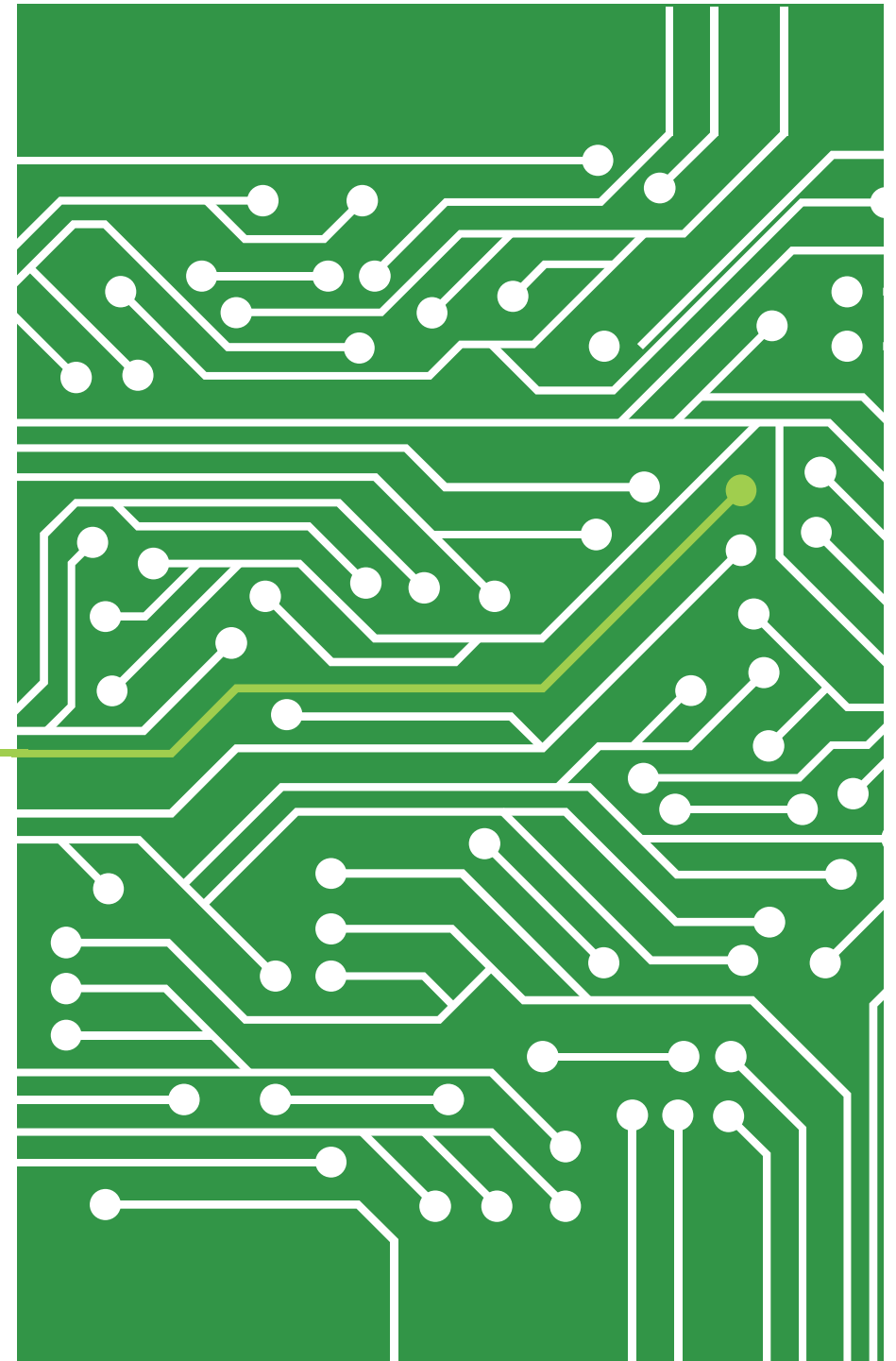


Vodafone CrowdCell Course:

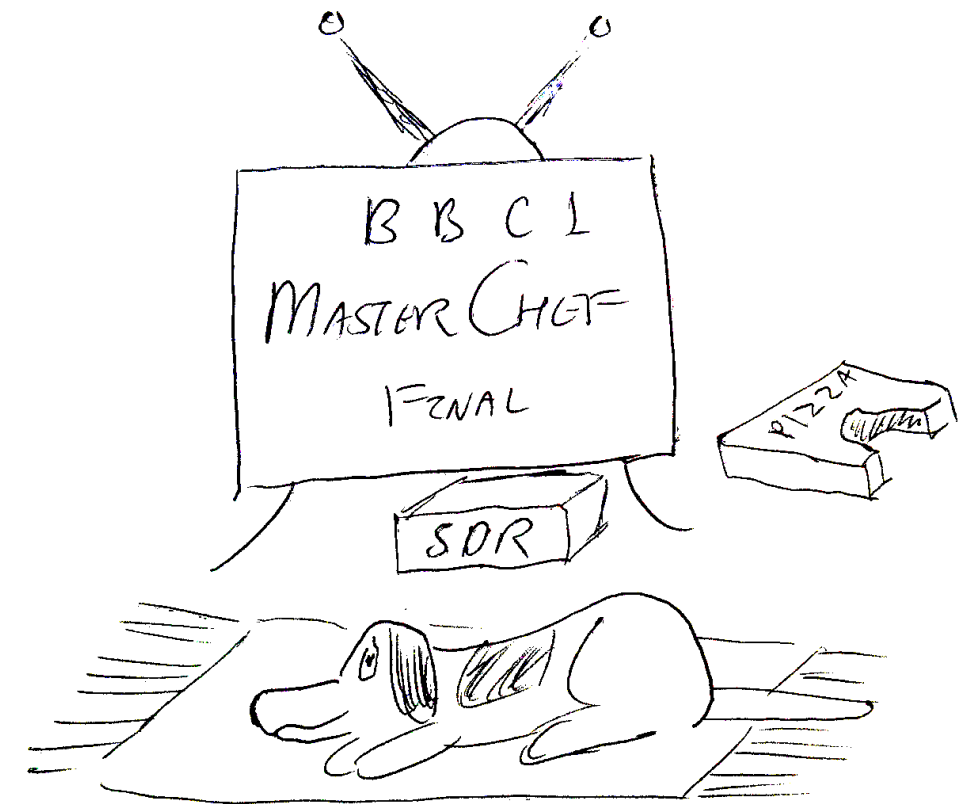
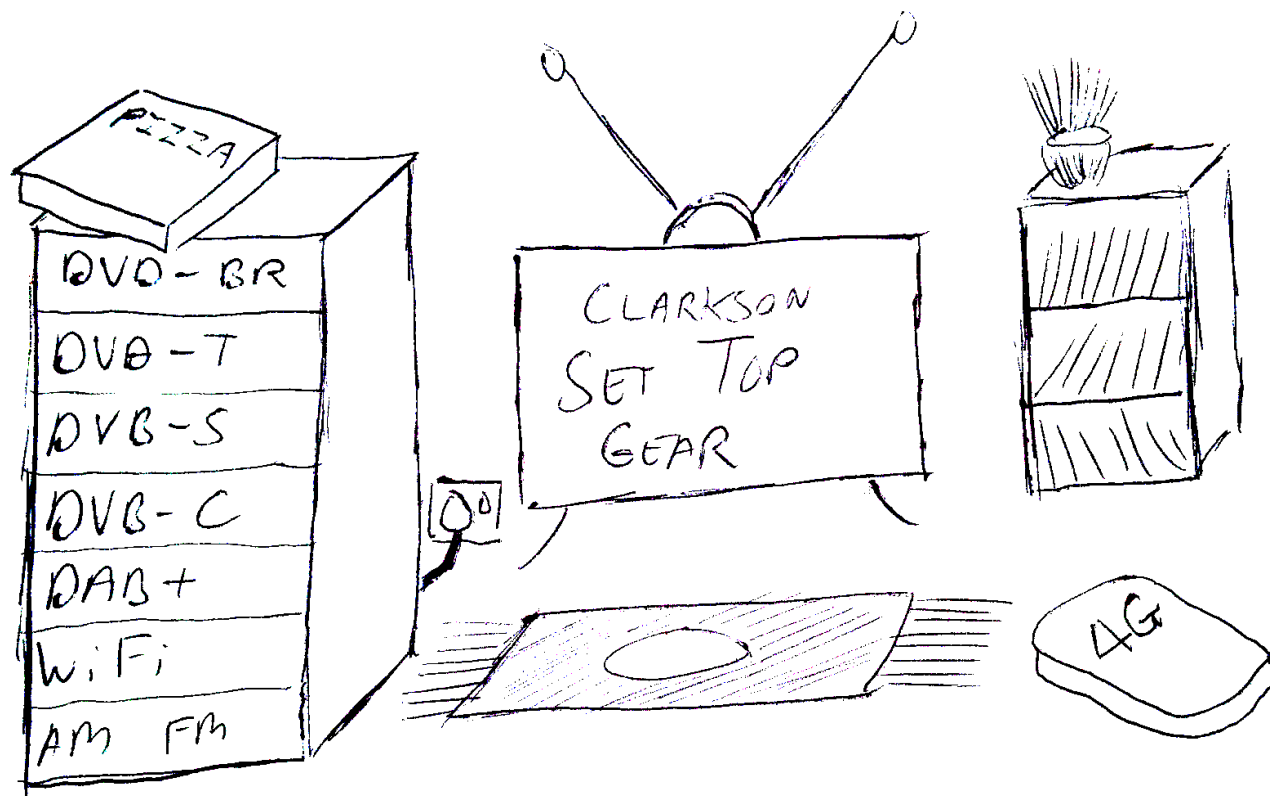
Software Defined Radio – An Introduction

Lime Microsystems | FPRF company

Guildford, Surrey, United Kingdom



So why do we need SDR? (Consumer's View)



BUSINESS CONFIDENTIAL

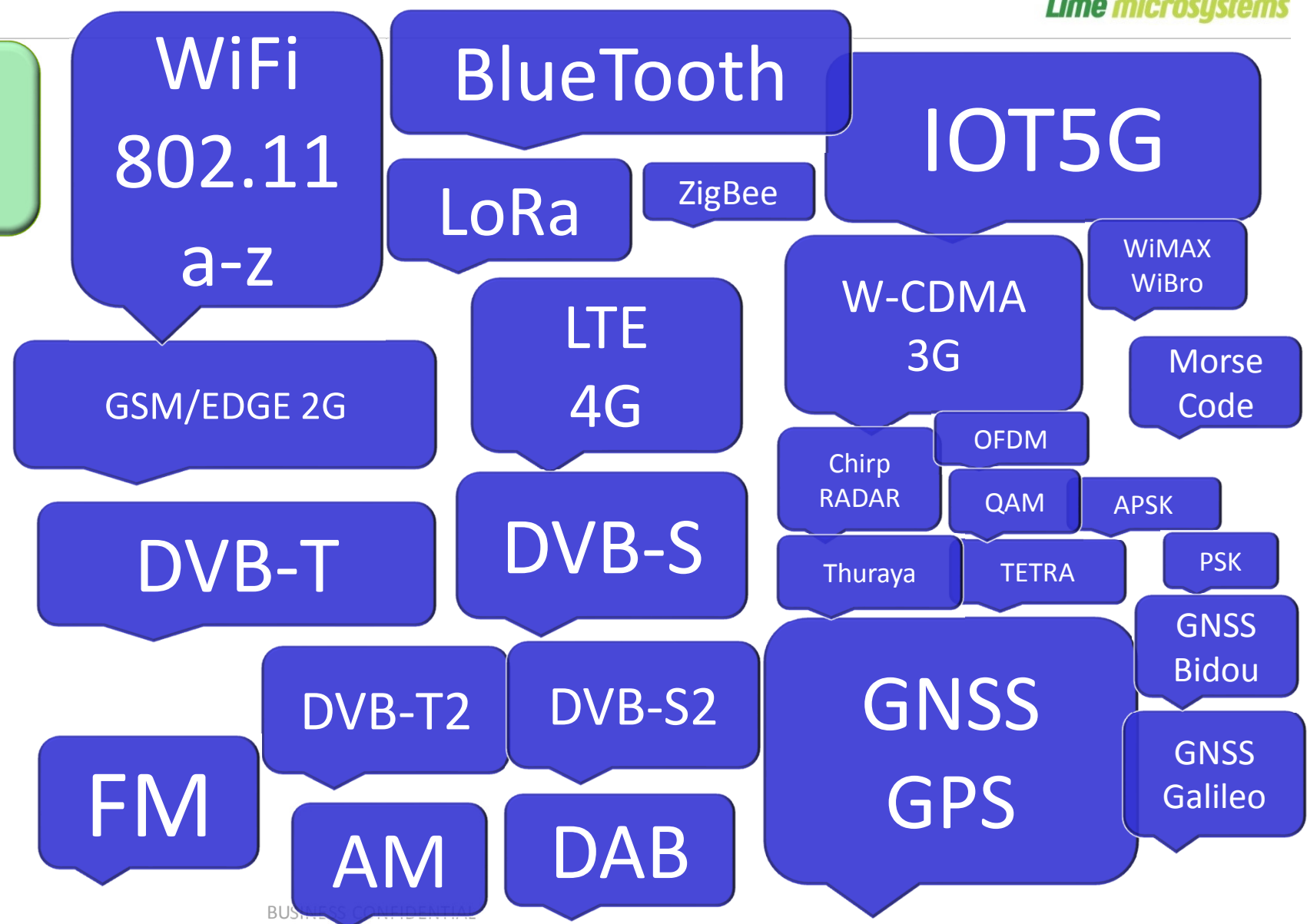
So why do we need SDR? (Engineer's View)



<1940s Morse AM FSK
1950s FM appeared
1978 Military GPS (CDMA)

Since 1991, an
explosion of Radio
Standards, many are
GMSK, CDMA and
OFDM based

We need SDR!!!



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Key Components for low cost “Dongle” SDR



RF Parts

Antennas
SAW Filters
RF Switches
Power Amps

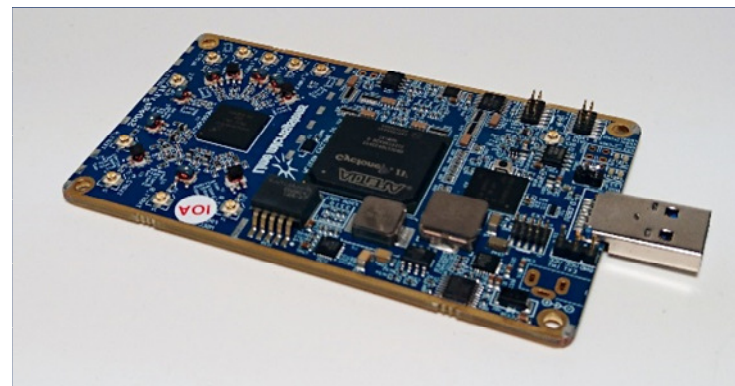
Optimal partitioning of the radio system leads to an easy to use low cost solution.

TRX RFIC

RF and DSP
Field Programmable

FPGA

Data link
Extra DSP e.g. ADPD



Open Source
Software/Apps

COMPUTER

Multicore
SIMD/NEON CPU

WiFi/Ethernet/
ADSL Network

USB2/3

PCIe

Typical MIMO SDR

