

## Winbox Technologies EVO1 Framework

Future TV OEM software framework

Based on Microsoft Embedded Windows CE

### Product Data Sheet

Software development framework suitable for building internet streaming, IPTV, VOD, internet on TV, PVR/DVR, DMA and Home Networking solutions



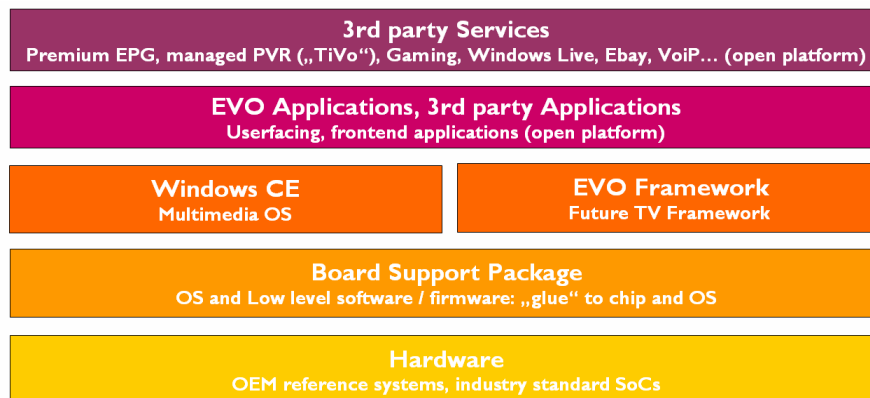
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## Introduction

### About EVO1 Framework

Winbox Technologies EVO Software Framework – a part of the Winbox Technologies EVO Ecosystem - is a rich set of commonly needed software modules that allows Winbox Technologies customers to build their own Future TV devices like IPTV receivers, PVRs / DVRs, digital set-top-boxes, hybrid TV receivers or DMA kind of devices with a significantly reduced time-to-market, less R&D investments / NREs and with less risk.

### The Winbox Technologies EVO Ecosystem



Winbox Technologies EVO is a full ecosystem available both as Turnkey OEM products including all software layers and massmarket ready OEM-hardware systems but also on an individual layer licence base for those customers who want to use inhouse R&D or 3<sup>rd</sup> parties to develop the upper layers of the software and / or develop their own hardware.

Furthermore, Winbox Technologies is offering professional services for support, training, integration or customization.

### The Winbox Technologies EVO Framework Concept

The EVO Framework was build with the goal to speed up development of typical Future TV applications that sit on top of Windows CE and the EVO Framework and therefore can leverage what has been done before in real-live deployments from large-scale customers like Pro7/Sat1 Broadcasting Group, ASUS, United Internet, Medion AG or Microsoft Corp.

The EVO Framework sits “next to” the Windows CE operating system. Versions 1.x are used with Windows CE 5.0, Version 2.x are used with Windows CE 6.0. The EVO Framework is well documented and can be used from developers with basic Windows Embedded know-how after some initial days of training. After this kick-off, development can happen independently in the customer’s team. Winbox Technologies offers different support options ranging from basic office hour support calls to a full array of professional services if requested.



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## Main Areas of Functionality

EVO Framework currently offers around 500 function calls logically clustered in the following main areas of functionality:

### Basic Configuration

- Audio & Video Output Control
- Layer Management
- Convenience Functions like Volume Control, Brightness, Saturation etc.

### Persistency

- Core Persistence Service used for Channel lists, Transponder Lists etc.
- Supports XML
- Support for other formats possible

### Archive Manager

- Add and remove Recordings
- Manage extended Metadata

### Channel Manager

- Scanning for channels
- Tuning between channels
- Storing of channel lists
- Modification of channel list

### Resource Management

- Manages resources like shared memory
- Provides a standard interface to different kind of resources

### Tuner Management

- Supports DVB-T and C (S in Development)
- Frequency Management
- Tuner feature detection

### Multimedia Players

- MPEG PS Player for Recordings
- TV Timeshift Player for complex usecases with Timeshift and recordings
- Live TV Player for simple "Zapping only" usecases
- Videotext Player (Engine) requires SI Collector Engine
- DVB Subtitle Player (Engine) requires SI Collector Engine

### DVB Service Information

- SI Collector Engine to collect all relevant SI packets out of the stream
- Background system for DVB Subtitles
- Background system for DVB Teletext
- Background system for DVB CA Systems
- Background system for DVB

### TV recorders manager

- Schedule recordings
- Control conflicts when having parallel recordings and TV
- Save Metadata in the Archive
- Background recordings

### DVB Embedded Conditional Access

- Support for Embedded CA Systems like Conax
- Smartcard Handling
- Maturity Rate Handling
- Descrambler Control

### ActiveX Controls for HTML service integration

- Virtual Keyboard control to allow easy text functions in websites
- Basic STB Identification control to receive infos like SerialNo from the STB

### Flash File System

- Transaction Safe
- Fully integrated in WinCE
- Can be addressed using standard API's

### Remote Update System

- Forced and Nonforced Updates
- Application and OS Updates
- Secure communication with the server using ssl and additional encryption
- Server Component available as separate product



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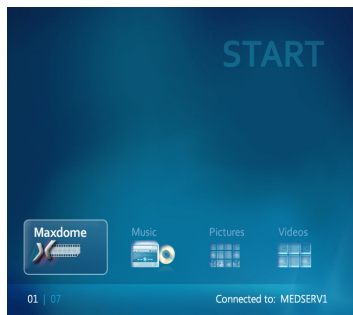
## Developing your own solution using EVO Framework

Developing your own solution on top of Windows CE and the EVO Framework is straight forward:

- Use Microsoft standard development tools like Platform Builder or Visual Studio
- Known way of working for "Microsoft flavoured" developers
- Documentation and Sample code included

## Customer Examples

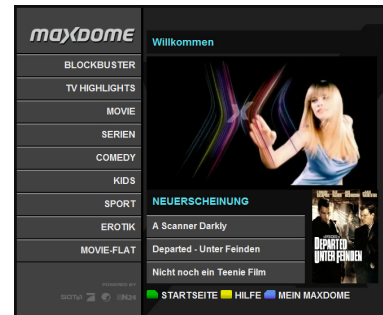
Winbox Technologies EVO framework is already used for a variety of different device categories in many countries. Some examples include Pro7/Sat1 Broadcasting Group, moreTV, ASUS, Microsoft and Medion. Selected customer case studies can be provided on request.



Entry point to various digital contents: the EVO DMA Main Menu



Home Networking: Browsing media content using a rich user interface



Premium content integration example using HTML extensions: Maxdome Video-on-Demand

## Business Model & Return-On-Invest

The Winbox Technologies EVO Framework is available on a licence basis. Individual extensions or special customer support like on-site training are available on professional services / NRE base. As using Winbox Technologies EVO Framework significantly reduces your inhouse R&D efforts, time-to-market can be optimized, development risks are reduced and NREs / upfront invests needed to build your own Future TV device using WindowsCE are vastly eliminated.

For getting your individual pricing schema, please contact Winbox Technologies sales.



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Also Available – The EVO product line

Item	Product Name	Description
<b>1</b>	<b>EVO1 Turnkeys</b>	
1.1	EVO1 XS	Super small formfactor IPTV, VOD, DMA OEM device with full software and application stack (IP-Only)
1.2	EVO1 M	Mid-size formfactor IPTV, VOD, DMA, DVB-Hybrid-Single-Tuner Zapper with full software and application stack (DVB / IP hybrid)
1.3	EVO1 L	Full-size formfactor IPTV, VOD, DMA, DVB-Hybrid-Dual-Tuner PVR/DVR with CA/CI System, internal HDD with full software and application stack (DVB / IP hybrid)
<b>2</b>	<b>EVO Board Support Packages</b>	
2.1	EVO1 BSP	Rich Board Support Package for NXP STB 810 and EVO1 compatible systems for Windows CE 5.0
2.2	EVO2 BSP [available Q3/08]	Rich Board Support Package for NXP STB 225 and EVO2 compatible systems for Windows CE 6.0
<b>3</b>	<b>EVO Frameworks</b>	
3.1	EVO1 Framework	Rich software development framework for WindowsCE 5.0 and IPTV, VOD, DVR/PVR, Hybrid-TV, DMA, Home Networking Business Cases
3.1.1	EVO1 Framework – Flash FileSystem	Reliable, faultolerant FlashFileSystem
3.1.2	EVO1 Framework – Update Client	Update Client for remote over IP updates
3.1.3	EVO1 Framework – Update Server	Update Server for remote over IP updates
<b>4</b>	<b>EVO Applications</b>	
4.1	DMA / VOD Application	Complete application set including Microsoft look-a-like User Interface featuring HTML service integration, Windows Live Messenger, Home Media Networking
4.2	Hybrid Zapper Application [available Q1/08]	Complete application set including Microsoft look-a-like User Interface featuring full DVB-integration, hybrid TV integration, Home Media Networking, HTML service integration
4.3	Hybrid PVR Application	Complete application set including moreTV User Interface featuring Dual-Stream DVR/PVR with “TiVo” like features, PiP, CA/CI Integration, Home Media Networking, HTML service integration
<b>5</b>	<b>EVO SDKS &amp; Development Tools</b>	
5.1.1	EVO1 Software SDK	Board Support Package SDK for Windows CE 5.0
5.1.2	EVO1 Hardware SDK	Including NXP reference Board STB 810
5.1.1	EVO2 Software SDK [available Q3/08]	Board Support Package SDK for Windows CE 6.0
5.1.2	EVO2 Hardware SDK [available Q3/08]	Including NXP reference Board STB 225
<b>6</b>	<b>EVO Professional Services</b>	
3.3.1	EVO Development Support	Available from our professional services department
3.3.2	EVO Development Training	Available from our professional services department
3.3.3	EVO Customization	Available from our professional services department
3.3.3	EVO Individual Development	Available from our professional services department



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## About Winbox Technologies

Winbox Technologies (formerly known as TeleGent) is the leading provider of OEM technology solutions for Windows Embedded based TV-centric consumer electronics. IPTV receivers, video on demand systems (VoD), harddisk videorecorders (PVR / DVR), connected TV-sets and set-top-boxes can be realized with less development investments and time by using Winbox Technologies' products. Customers can either source so called "TurnKeys" which contain a complete OEM solution including hardware, software and production services or license specific technology modules for in-house development. Partners and customers include Microsoft, NXP, ASUS, Sling Media, Medion and ProSiebenSat.1.

More Information about Winbox Technologies and or products is available online at <http://www.winbox.ag> or contact our sales department [sales@winbox.ag](mailto:sales@winbox.ag)

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