

TES Electronic Solutions

guiliani

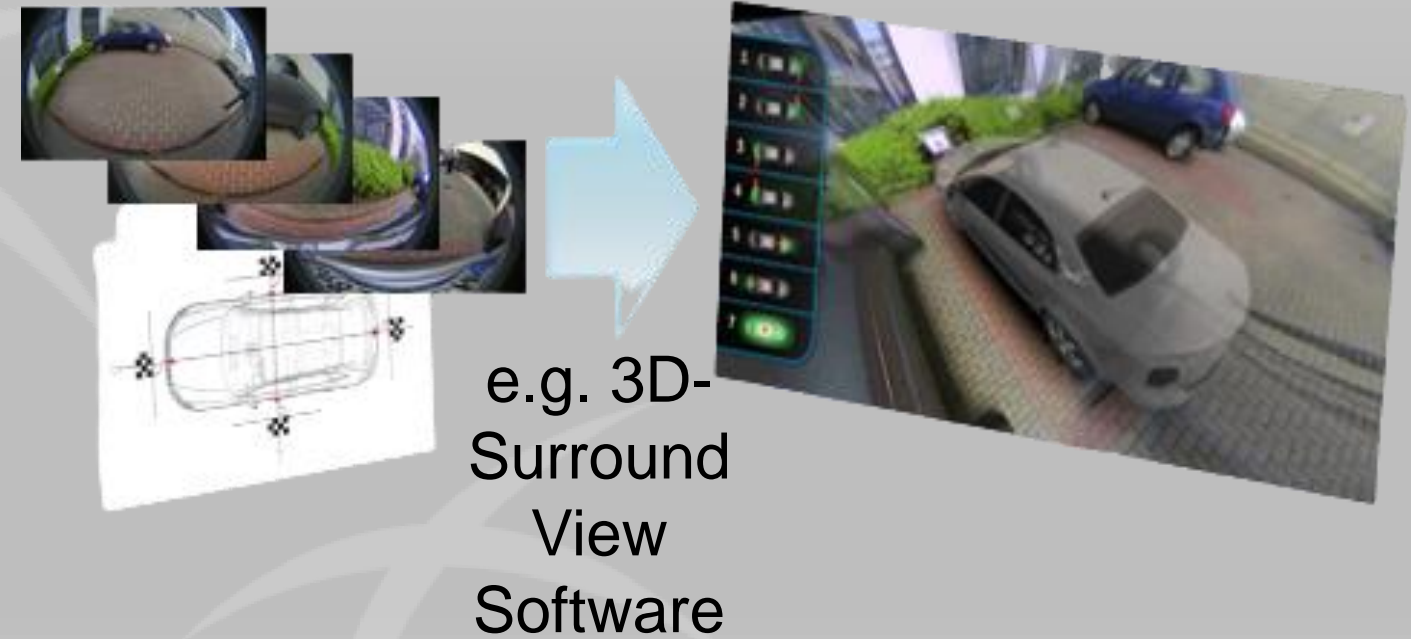
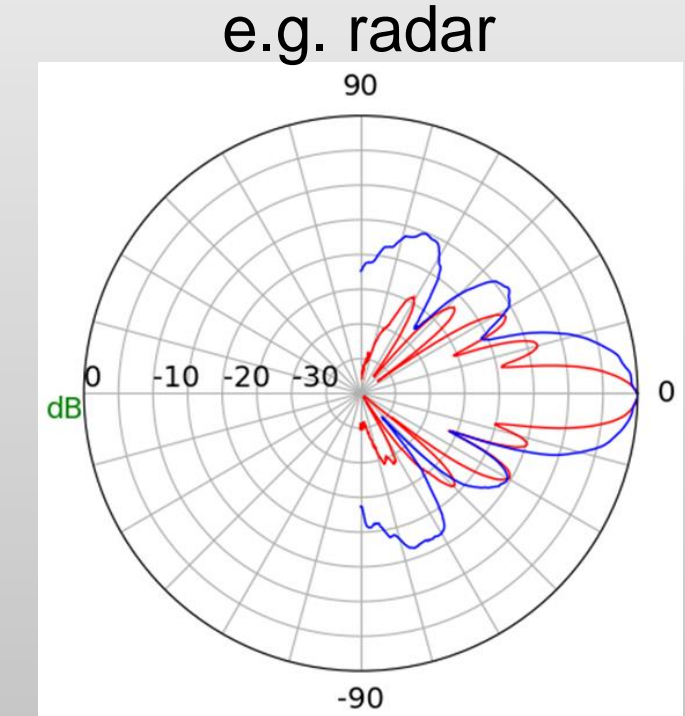
Overview 3Q22

www.guiliani.de

info@guiliani.de

Guiliani is a TES Electronic Solutions original software product

- TES is a **Technology and Design Services Company** based in Germany with a global customer base.
- 90 employees, 90% engineers
- **Embedded software, Graphics, RF such as radar and chip design including mixed signal, FPGA**
- We Create – Design – Manufacture
- **Close Semiconductor Industry Partner** for 20 years, in all imaginable applications...



Guiliani Differentiators – Why Guiliani?

- **Guiliani is a software framework for creating stylish Graphical User Interfaces on any embedded hardware**
- Fast, easy, professional! Time-proven in millions of embedded systems!

Top 5 reasons to choose Guiliani, based on customer testimonials	Your Benefit
Powerful , modern object-orientated C++ GUI software	Fast time to market
Intuitive WYSIWYG Guiliani Streaming Editor (GSE)	Get work done quickly
Innovative streaming of graphics assets	Supports teamwork
Scalable from MCU to MPU, from bare metal to Linux	Learn once, develop many
Best-in-class technical support & services	Projects on time, on budget

Flexible Business Model to meet your commercial needs as well

Guiliani Positioning and Scalability

Premise: embedded GUI = fine granularity range.

Guiliani is perfectly scalable across **both**, MCU & MPU. Bare-metal, RTOS...Linux.



Simple UI:
7seg, dot matrix
Outside of scope



MCU 48MHz
1MB Flash
2" TFT
128x128

MCU 100MHz
2MB Flash
4" TFT
320x240

MCU X00MHz
4MB Flash
7" TFT
640x480

MPU X00MHz
Big Flash
10" TFT
1024x768

MPU GHz
Huge Flash
17" TFT
Full HD



IPC
Outside of scope

Cortex M
RTOS

Cortex A
Linux



guiliani

Guiliani Customer Voices

“This proved to be a great partnership,
as both companies <TES and Renesas> provided **solid technical support**
throughout the development”

S.F., Head of Engineering at customer L., UK

“**We are really enjoying using Guiliani:**
basic controls and behaviors are very easy to handle
with the provided example project and with only a few application code
one can do **really powerful and amazing stuff!** Simulator is also a great feature...”

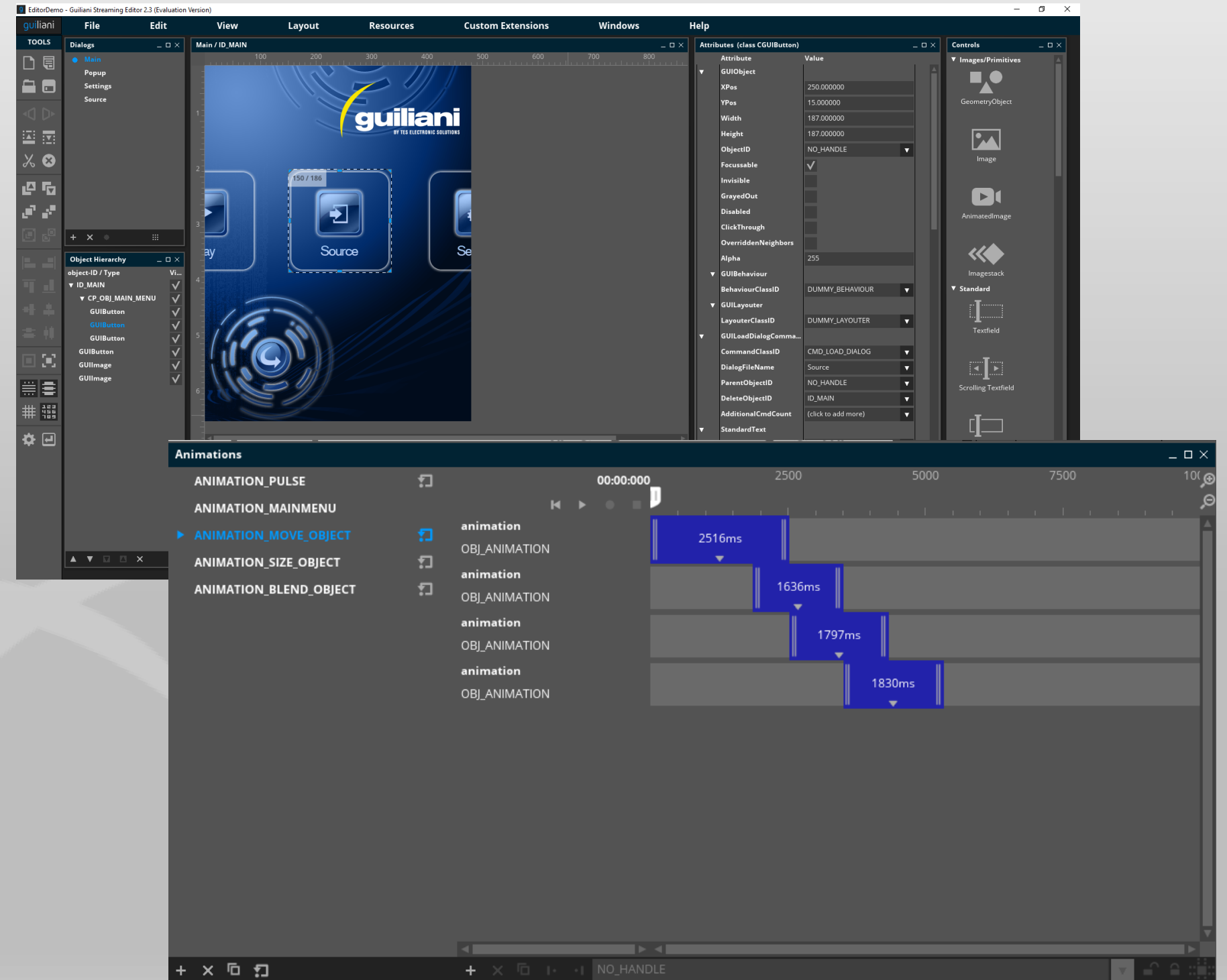
X.R., R&D at customer R., France

“I am compiling my **very positive results**
for my management team.”

M.S., R&D at customer M., USA
upon completion of a deep-dive evaluation
with creation of a „Proof of Concept“

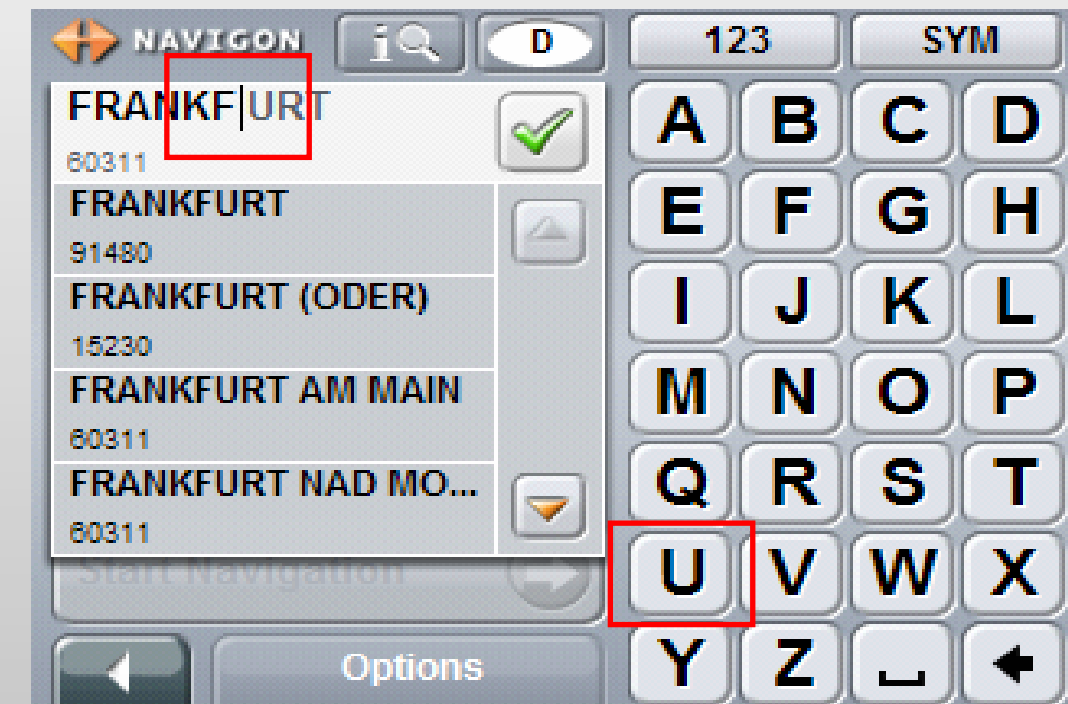
Guiliani Technologies at a glance (1)

- Modern, **object-oriented C++ framework**, easily interacts with ANSI C, of course
- The Guiliani Streaming Editor (GSE) is intuitive to use and runs on Guiliani too (!), therefore it can easily simulate your GUI on your PC even **before you have target hardware**
- Cool **animations** editing to easily create even complex animations within minutes
- GSE available under Windows & Linux

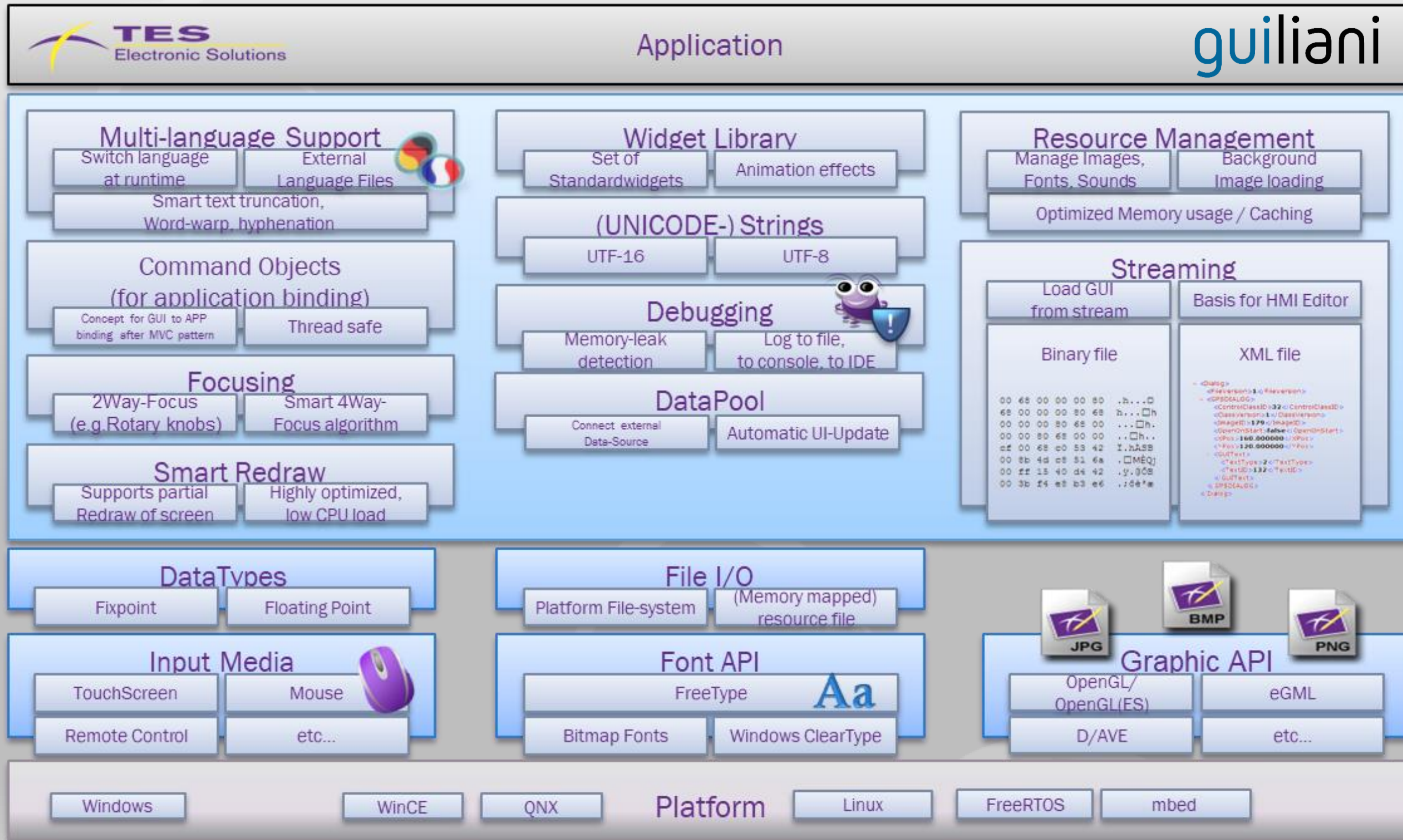


Guiliani Technologies at a glance (2)

- Modular Design = customizable, portable, efficient
- **Guiliani Streaming Engine creates the user interface at run-time using XML/binary = agile!**
- Highly optimized utilization of D/AVE GPUs, because we know every line of code in Guiliani and every single gate in D/AVE GPUs...
- **Smart, partial redraw saves performance and bandwidth**
- Performance Profiling Tools keep engineers in the know



Guiliani Technologies at a glance (3)



Guiliani Feature Examples (the list goes on...)

<p>MAIN MENU</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>guiliani</p>	<p>SLIDER</p> <p>✓ VISIBLE</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>BUTTONS SLIDER SLIDER guiliani</p>	<p>SLIDER</p> <p>7-50</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>BUTTONS SLIDER SLIDER guiliani</p>	<p>KNOBS</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>KNOBS DATE/TIME GAUGE guiliani</p>
<p>DATE/TIME</p> <p>AUGUST 2020</p> <p>MO TU WE TH FR SA SU</p> <p>27 28 29 30 31 1 2</p> <p>3 4 5 6 7 8 9</p> <p>10 11 12 13 14 15 16</p> <p>17 18 19 20 21 22 23</p> <p>24 25 26 27 28 29 30</p> <p>31 1 2 3 4 5 6</p> <p>2020-08-08</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>KNOBS DATE/TIME GAUGE guiliani</p>	<p>GAUGE AND WHEEL</p> <p>195</p> <p>190</p> <p>185</p> <p>180</p> <p>175</p> <p>HIGH</p> <p>MIDDLE</p> <p>LOW</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>KNOBS DATE/TIME GAUGE guiliani</p>	<p>KEYBOARD</p> <p>USER: Password: SHOW</p> <p>User *****</p> <p>Q W E R T Y U I O P</p> <p>A S D F G H J K L</p> <p>abc Z X C V B N M</p> <p>123 , Space .</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>guiliani</p>	<p>TEXT</p> <p>ONE MORNING, AS GREGOR SAMSA WAS WAKING UP FROM ANXIOUS DREAMS, HE DISCOVERED THAT IN HIS BED HE HAD BEEN CHANGED INTO A MONSTROUS VERMINOUS BUG. HE LAY ON HIS ARMOUR-HARD BACK AND SAW, AS HE LIFTED HIS HEAD UP A LITTLE, HIS BROWN, ARCHED ABDOMEN DIVIDED UP INTO RIGID BOW-LIKE SECTIONS. FROM THIS HEIGHT THE BLANKET, JUST ABOUT READY TO SLIDE OFF COMPLETELY, COULD HARDLY STAY IN PLACE. HIS NUMEROUS LEGS, PITIFULLY THIN IN COMPARISON TO THE REST OF HIS CIRCUMFERENCE, FLICKE...</p> <p>RT/NT</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>guiliani</p>
<p>CAROUSEL</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>CAROUSEL CONTAINER CONTAINER guiliani</p>	<p>VIDEO</p> <p> <-</p> <p><< 10</p> <p>>> 10</p> <p>PLAY</p> <p>PAUSE</p> <p>STOP</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>ANIMATION EASING VIDEO guiliani</p>	<p>CHART</p> <p>80</p> <p>64</p> <p>48</p> <p>32</p> <p>16</p> <p>1971 1972 1973 1974 1975</p> <p>POPULATION: DE FR UK</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>CHART GRAPH PLOT guiliani</p>	<p>SETTINGS</p> <p>TRANSITION: PUSH FROM TOP</p> <p>BACKGROUND: IMAGE (NATIVE)</p> <p>EASING: EASE-IN-OUT SINE</p> <p>CHANGE SKIN</p> <p>TOGGLE NEON</p> <p>TOGGLE FPS</p> <p>TOGGLE INV</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>GUILIANI V2.4.XXXX GFX: EGML PLATFORM: X86, WIN32, MSVC guiliani</p>

Guiliani Target Applications

Guiliani excels in **all embedded applications** such as

Appliances

Automotive & transportation

Battery operated devices

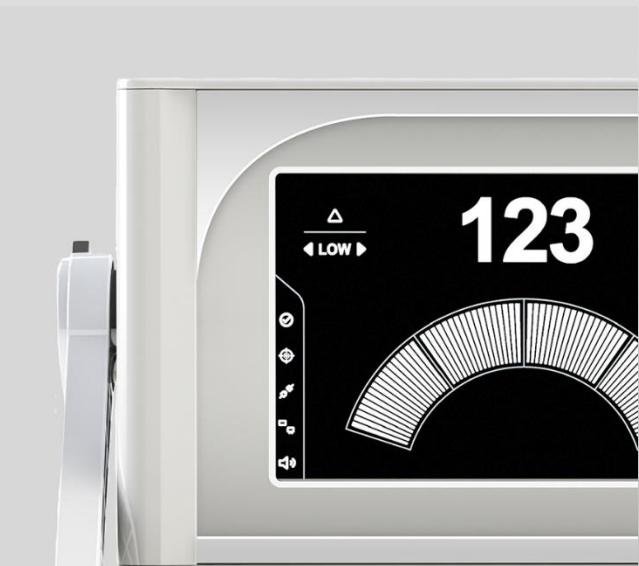
Home & Building Automation

Industrial, Test & Measurement

Medical & Fitness

Wearables

Point of Sales (EPOS)

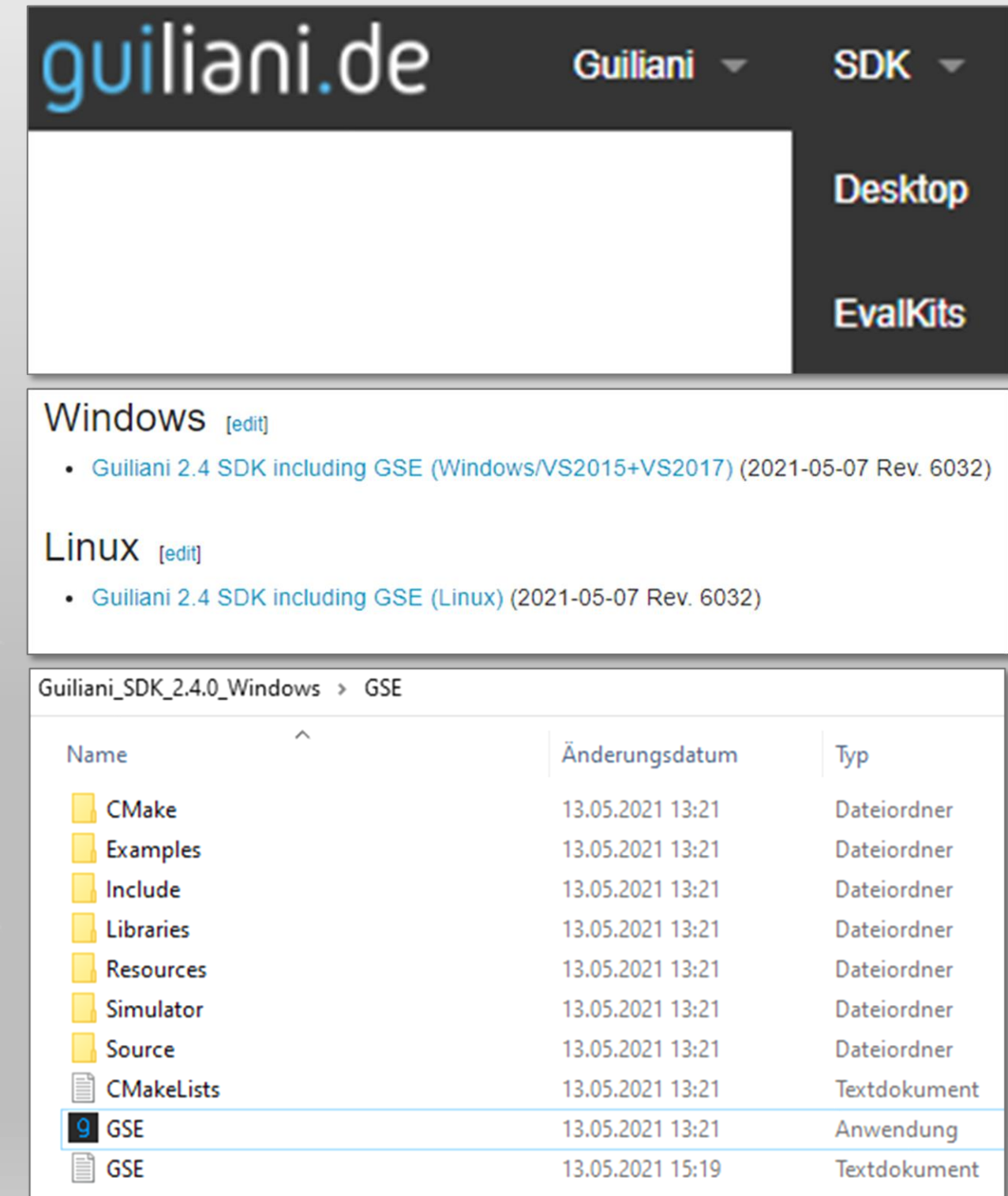


It's easy to get your hands dirty

1. Go to www.guiliani.de
2. Choose SDK/Desktop
3. Click on the Windows or Linux Download
4. Unpack the ZIP File
5. Start gse.exe (in the gse subfolder)

et voilà!

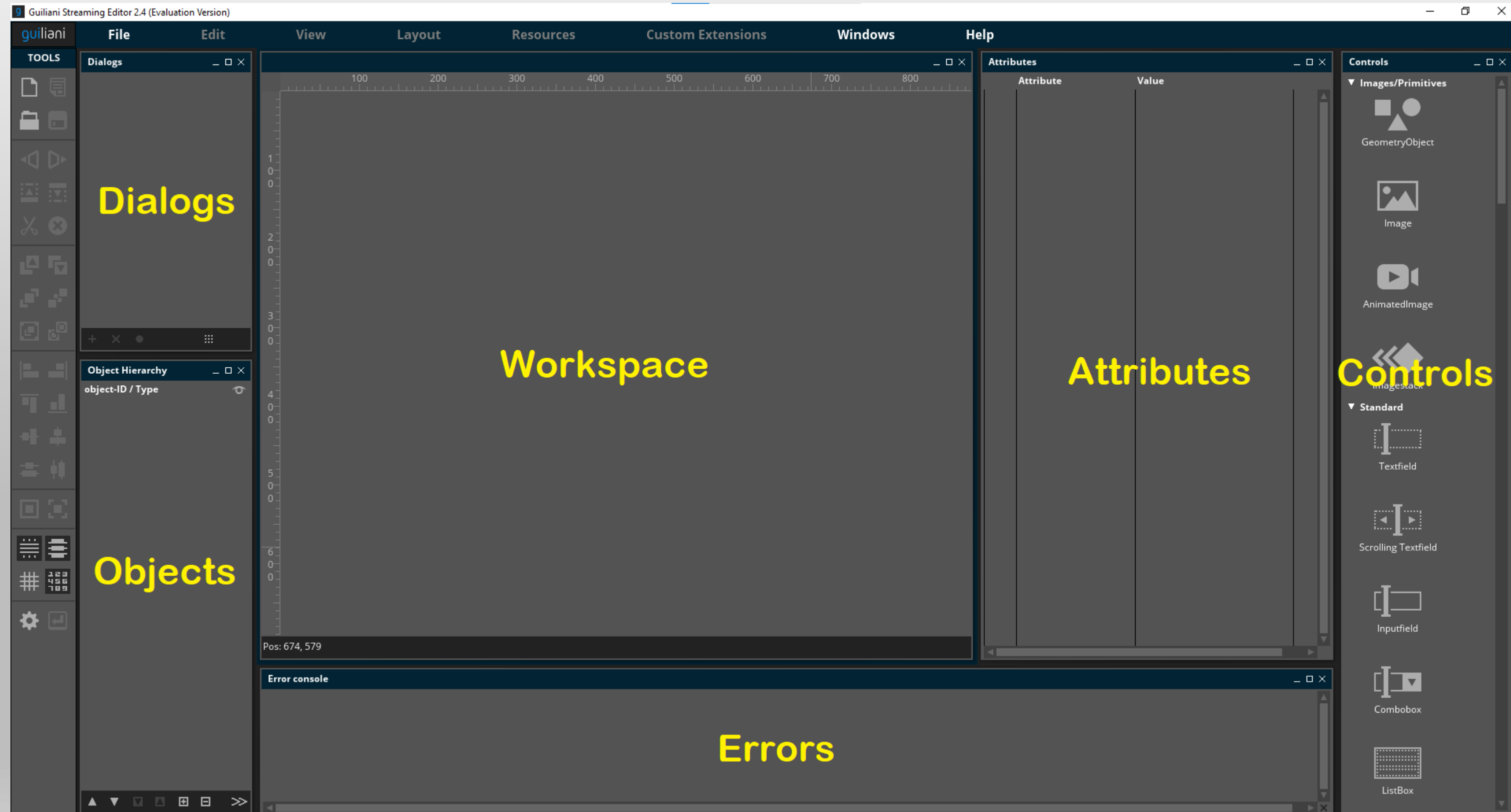
You are sitting in front of the
Guiliani Streaming Editor (GSE) now!



The screenshot shows the Guiliani website interface. At the top, the logo 'guiliani.de' is visible, along with navigation menus for 'Guiliani' and 'SDK'. A dropdown menu is open, showing 'Desktop' and 'EvalKits' options. Below this, there are sections for 'Windows' and 'Linux', each with a list of download links for the 'Guiliani 2.4 SDK including GSE'. The bottom part of the screenshot shows a file explorer window for the path 'Guiliani_SDK_2.4.0_Windows > GSE'. The file explorer displays a table of files and folders:

Name	Änderungsdatum	Typ
CMake	13.05.2021 13:21	Dateiordner
Examples	13.05.2021 13:21	Dateiordner
Include	13.05.2021 13:21	Dateiordner
Libraries	13.05.2021 13:21	Dateiordner
Resources	13.05.2021 13:21	Dateiordner
Simulator	13.05.2021 13:21	Dateiordner
Source	13.05.2021 13:21	Dateiordner
CMakeLists	13.05.2021 13:21	Textdokument
GSE	13.05.2021 13:21	Anwendung
GSE	13.05.2021 15:19	Textdokument

Guiliani Streaming Editor (GSE)



Guiliani = Perfect Teamwork



Mary is artist.
Uses e.g. **Photoshop**.
Delivers artwork by
e.g. USB stick...

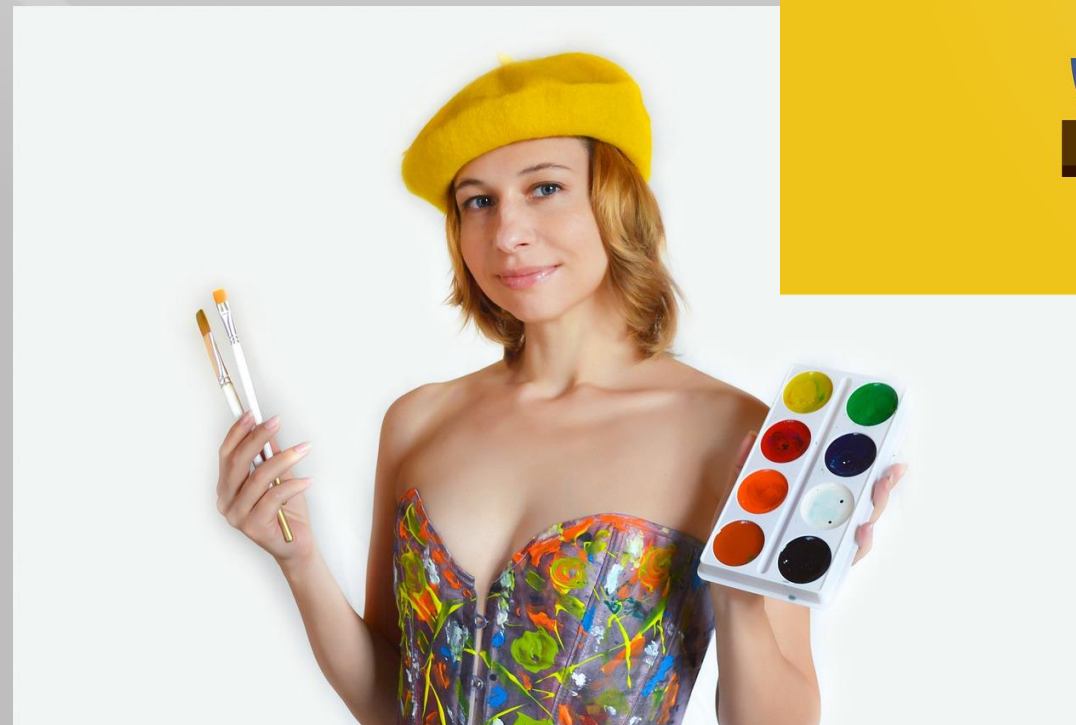
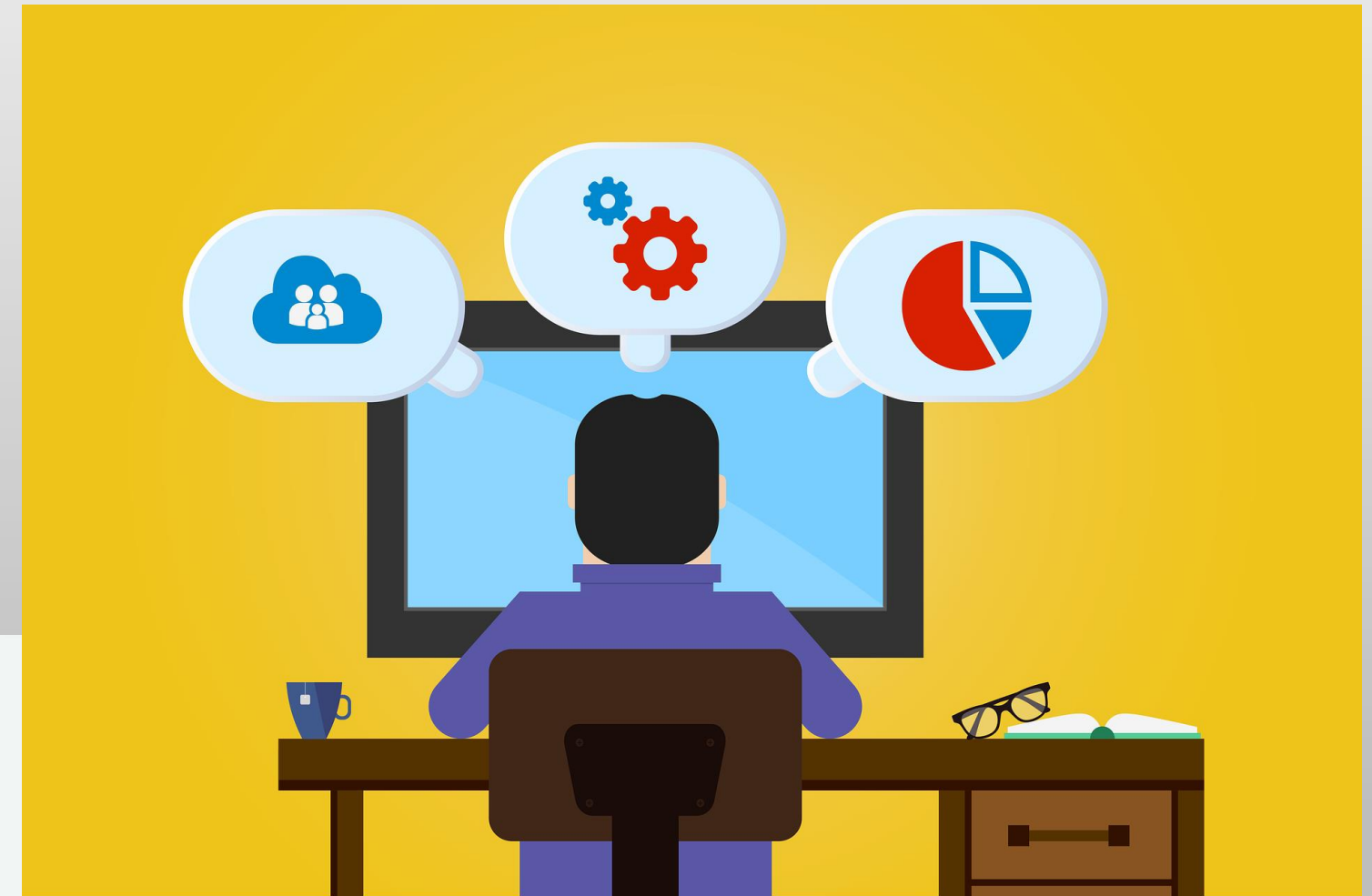


Tahir is engineer.
Uses **Guiliani** to integrate
Mary's artwork with the inputs
from other stakeholders...

Other stakeholders, e.g. Product Management, Sales, Marketing, etc...

Guiliani Support and Services

1. Professional Support & Maintenance
2. Engineering Support, e.g. porting to your hardware/tools/OS, application binding, performance optimizations...
3. Development of custom widgets and behaviors
4. Guiliani Trainings
5. Complete turn-key developments of products...
6. ...even manufacture and supply chain management!

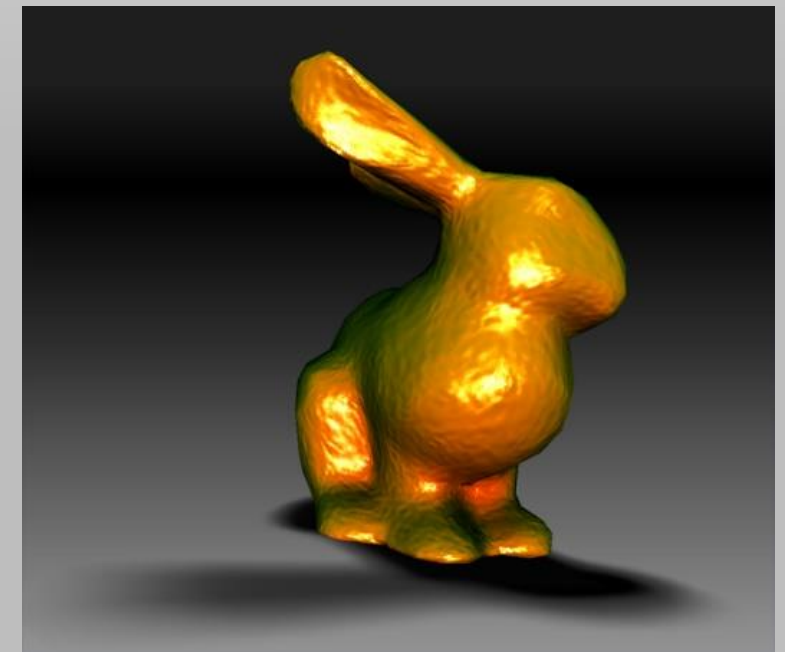


**Highest
customer
ratings!**

TES Electronic Solutions: Your holistic graphics partner (1)

- Graphics hard- and software = core competency
- We offer **Hardware IP Blocks** for integration into MCU/MPU and usage in FPGA designs:
 - Graphics Processing Units (GPU)s “D/AVE” family
 - Configurable Display Controller (CDC)
 - Configurable Video Input Controller (CVI)
 - TES Warping Engine
- **Graphics Software** beyond Guiliani such as..
 - 3D-Surround-View Software
 - Software rendering IP
- **And any combination of the above + services!**

dave **HD** dave **NX**
dave **2D** dave **3D**



TES Electronic Solutions: Your holistic graphics partner (2)

- **HOT NOW!**

Linux Graphics / GUI Solution Kit for FPGA

- Your quick start on an FPGA Graphics sub-system!
- Easy to install, including precompiled demos
- Low footprint: Only 5-6kAMLs required on FPGA side for D/AVE 2D GPU and CDC Display Controller, depending on feature configuration
- Includes Linux SDK with drivers, example source code
- Supported Board: Terasic D10-Nano Kit, powered by **Intel PSG Cyclone V SoC**

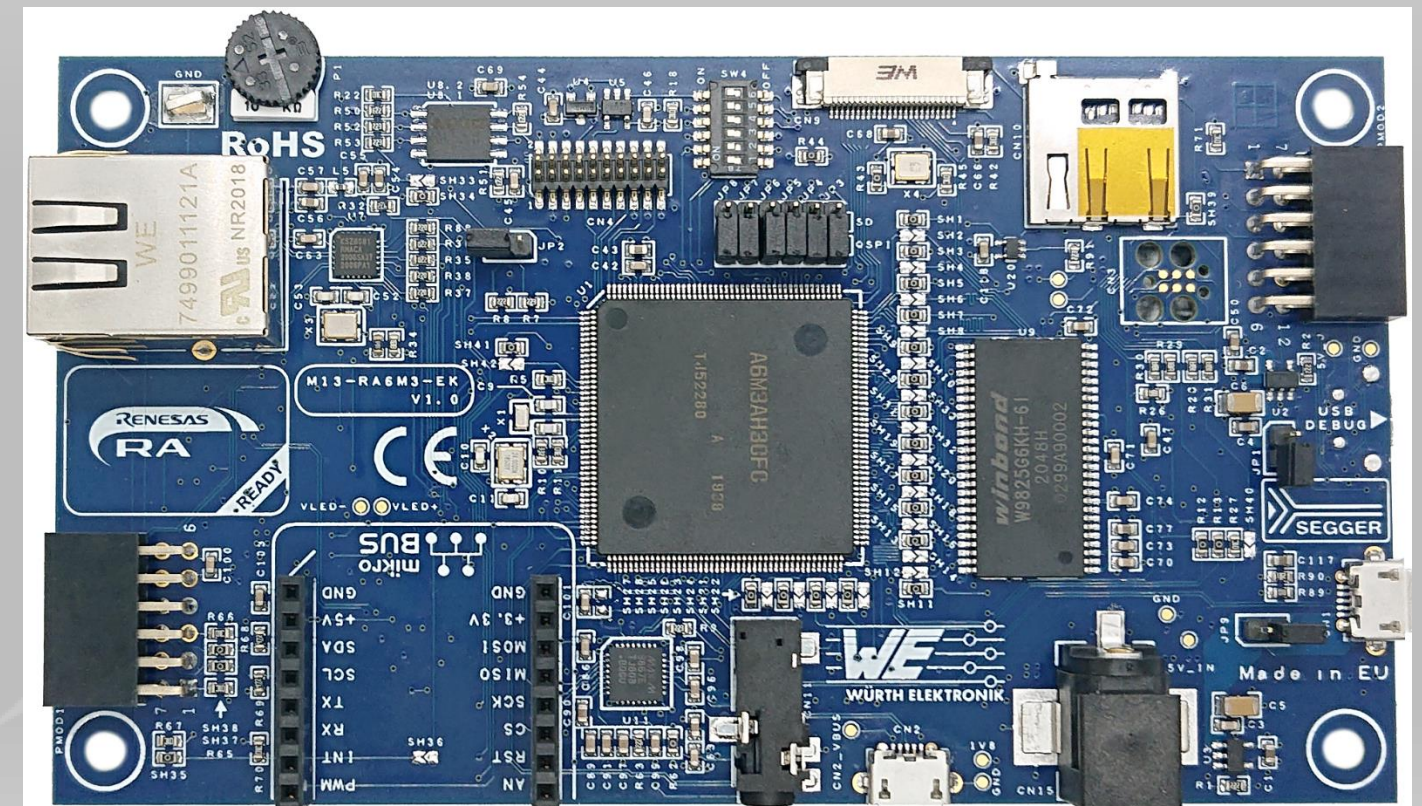
Complete Graphics Subsystem:

GUI-framework + GPU + Display Controller + drivers



Guiliani Partner Highlight: M13Design

1. M13Design in France design excellent MCU/MPU kits
2. The latest kit is for the Renesas RA6M3 MCU:
M13-RA6M3-EK Kit with 4.3" 480x272 LCD
Spec = RA6M3, 32MB QSPI Flash, 32MB SDRAM
ethernet, USB, J-Link OB debugger, 2x PMOD,
1x mikroBUS™ and a lot more...
3. Available! Click [here](#)
4. **Highlight:** M13Design can create YOUR derivative to meet your requirements quickly and at highly competitive cost
5. Contact: info@m13design.fr



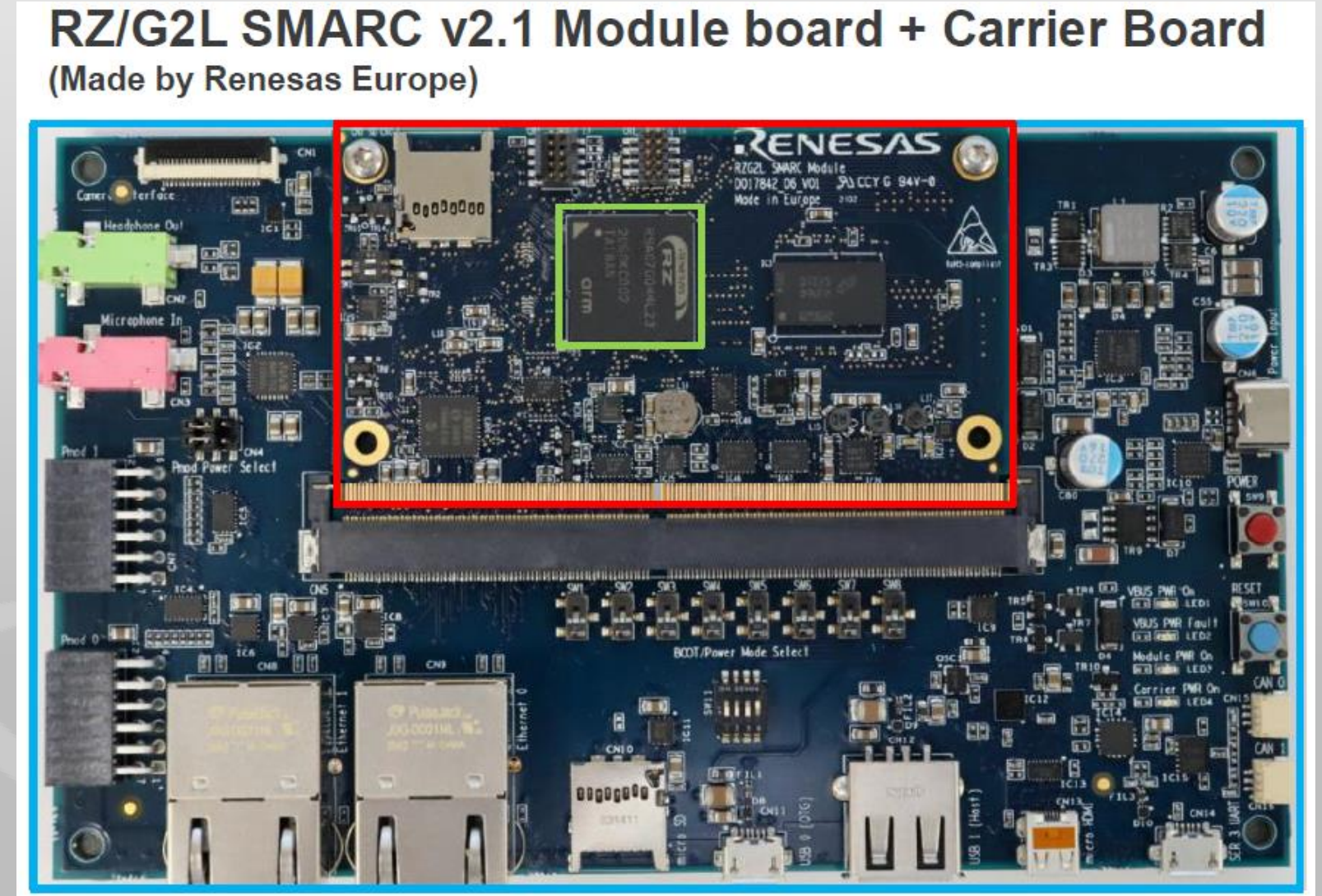
Guiliani Partner Highlight: emtrion

1. emtrion STM32MP1 Support: Available NOW!
2. **emSBC-Argon: STM32MP157-based Developer Kit with Linux**
Dual ARM Cortex-A7 at 650MHz
512MB SDRAM, 2MB QSPI NOR Flash,
8GB eMMC Flash, Lots of connectivity
3. www.emtrion.com
4. **Highlight:** emSBC-Argon available in volume off the shelf for super-rapid prototyping!
5. Contact: sales@emtrion.de



NEW Guiliani Partner Highlight: Renesas RZ/G2L

1. High performance MPU!
Dual core Cortex A55 at 1.2GHz
2. **SMARC v2.1 Module + Carrier**
2GB DDR4 + 64GB eMMC + micro-SD
Lots of connectivity such as 2x gigabit ether, 2x USB, micro HDMI, MIPI CSI for camera and so on...
3. Civil Infrastructure Platform SLTS Linux!
Secure Middleware, Multimedia.
And of course Guiliani!
Available NOW on www.guiliani.de
4. Contact: info@guiliani.de



PREVIEW Guiliani Partner Highlight: NEW RZ/A derivative! Launch in August...

1. Low cost MPU with 1GHz Cortex A55 core
Augments RZ/A family upwards...
2. **Quick boot by virtue of RTOS focus!**
200Mbit/s octal Flash interface
Lots of connectivity, e.g. 2x Gbit ether,
2x USB, MIPI-CSI, 2x CAN, lots of serial
and audio ports...
3. DDR4/3L memory interface
4. **Guiliani under development...**
5. Beta Customers Wanted Now!
Contact: info@guiliani.de



Guiliani Summary & Contacts

- Guiliani is a state-of-the-art, high quality, proven software product designed to empower the GUI of the best products anywhere in great style
- Customer's voice = **powerful, intuitive, innovative, perfectly scalable and well supported**
- Enables fast time-to-market, smooth teamwork and completing your projects on time and on budget
- **Please try it!** It's easy, even before you have target hardware. Because there are free desktop evaluation versions for Windows and Linux...



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www.guiliani.de

Thank you!

Stay tuned at <https://www.linkedin.com/company/tes-electronic-solutions>

