

**TES Electronic Solutions**

**guiliani**

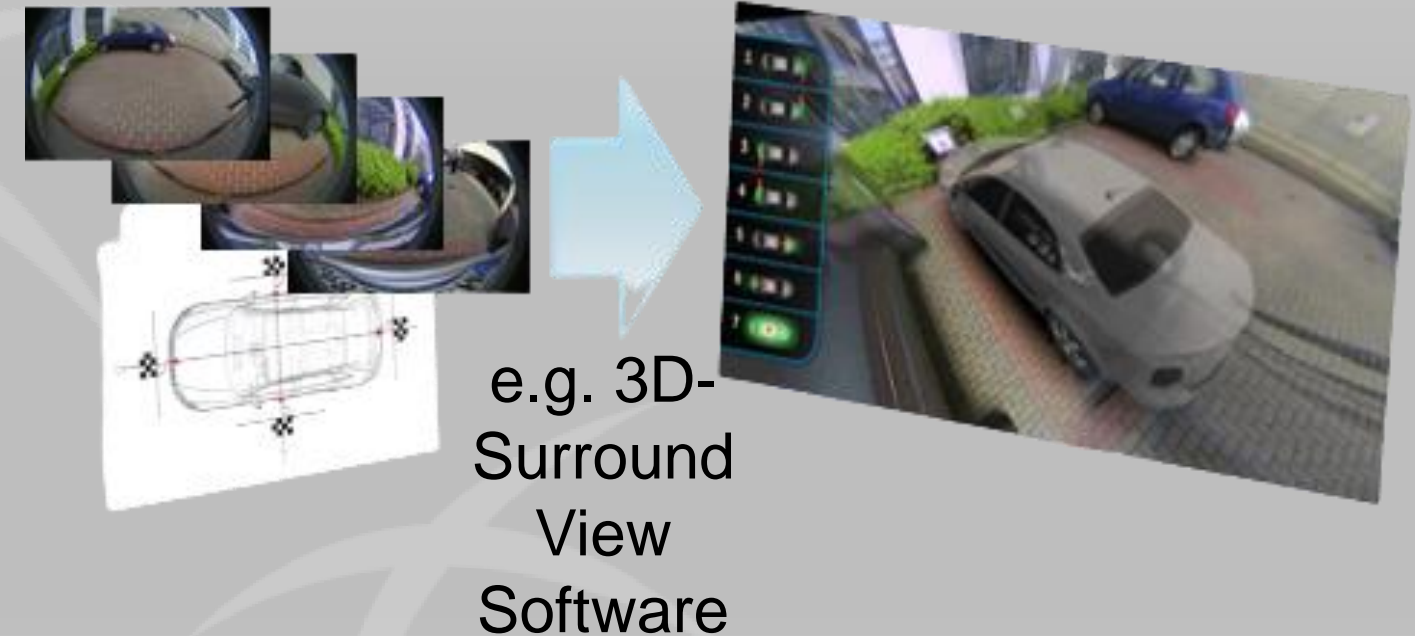
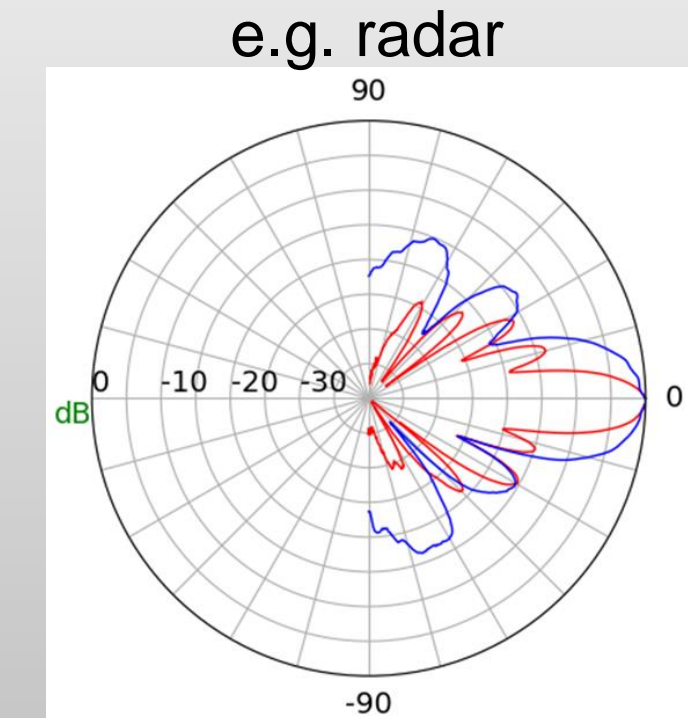
Overview 2Q23

[www.guiliani.de](http://www.guiliani.de)

[info@guiliani.de](mailto: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!

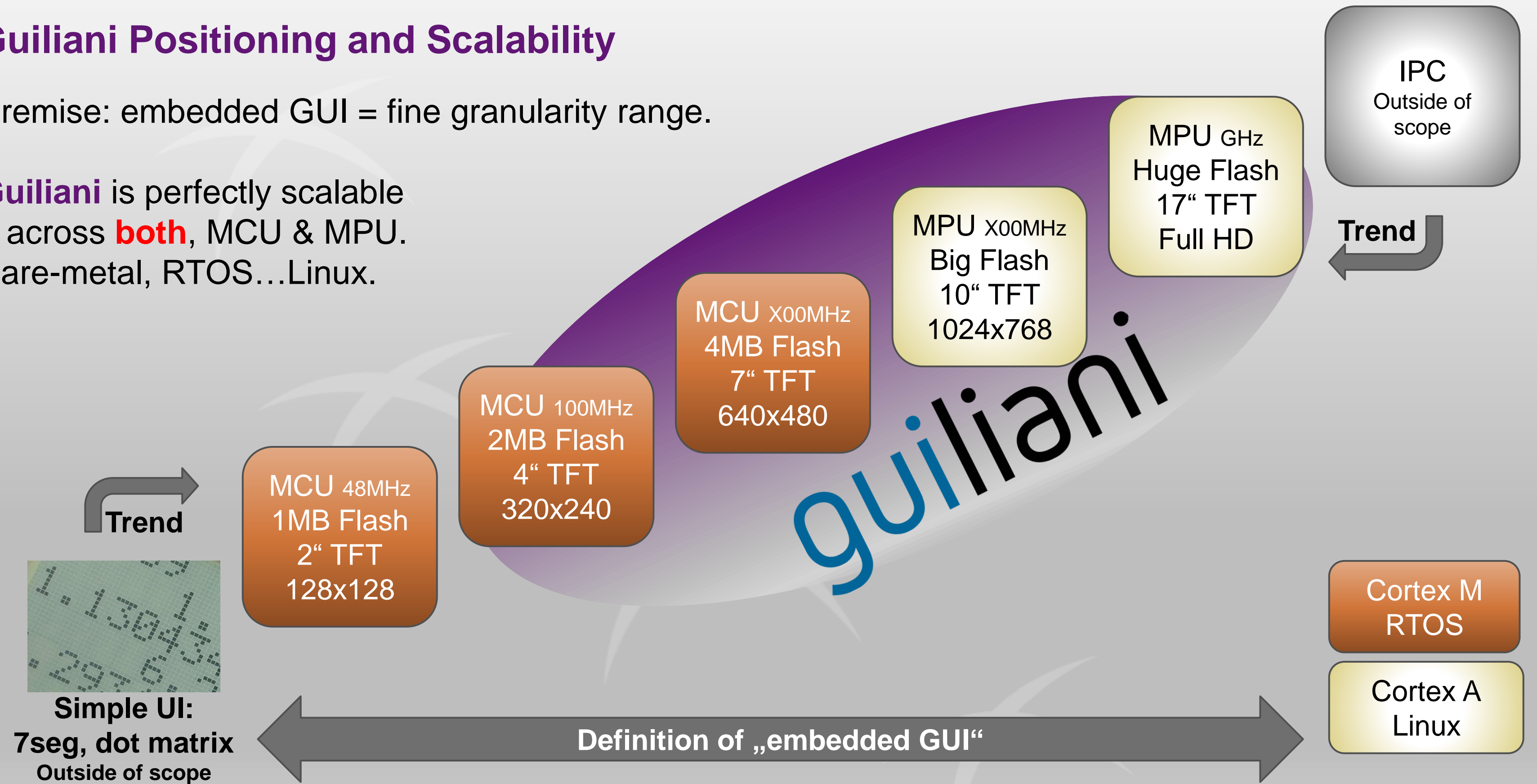
Top 5 reasons to choose Guiliani, based on customer testimonials	Your Benefit
<b>Powerful</b> , modern object-orientated C++ GUI software	Fast time to market
<b>Intuitive</b> WYSIWYG Guiliani Streaming Editor (GSE)	Get work done quickly
<b>Innovative</b> streaming of graphics assets	Supports teamwork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



## 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**

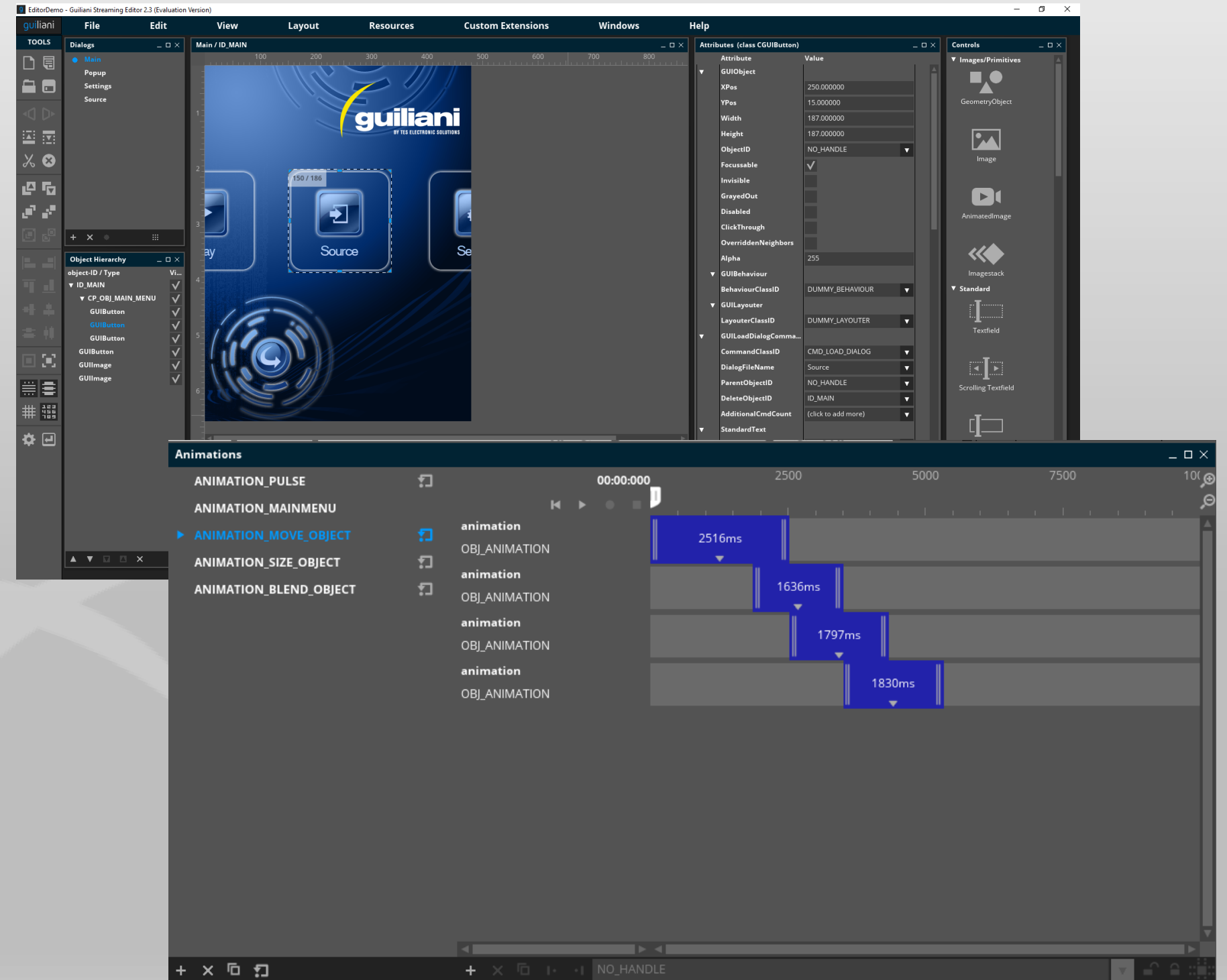
“I am compiling my **very positive results**  
for my management team.”

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

**“As easy as powerpoint!”**  
Distribution FAE

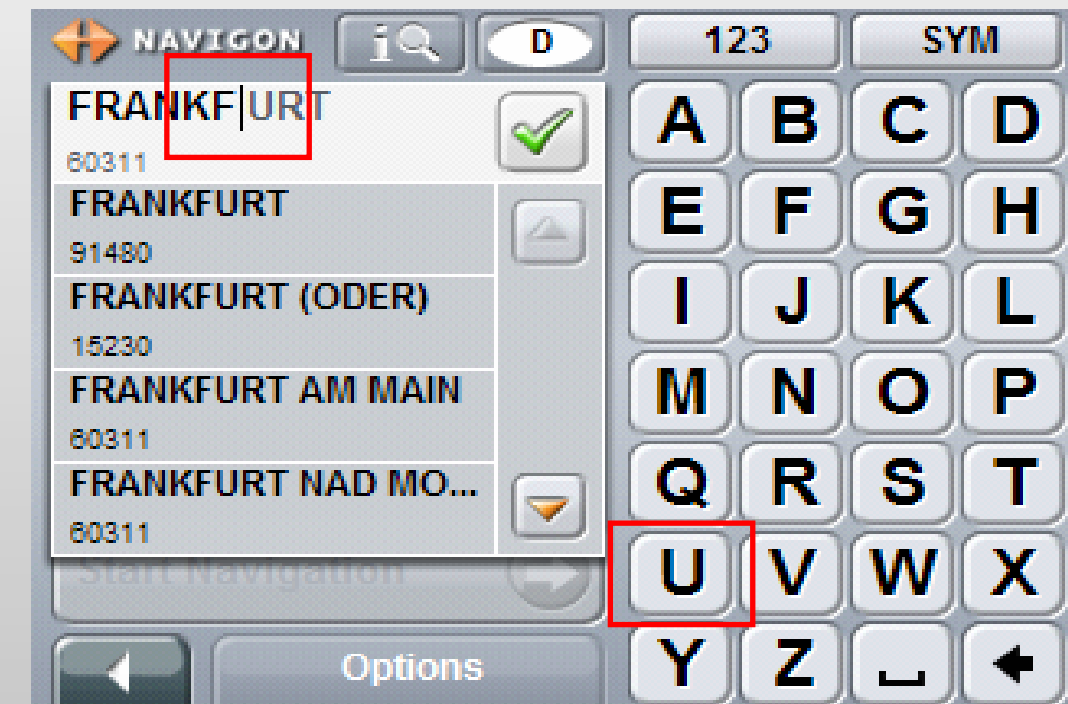
# Guiliani Technologies at a glance (1)

- 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

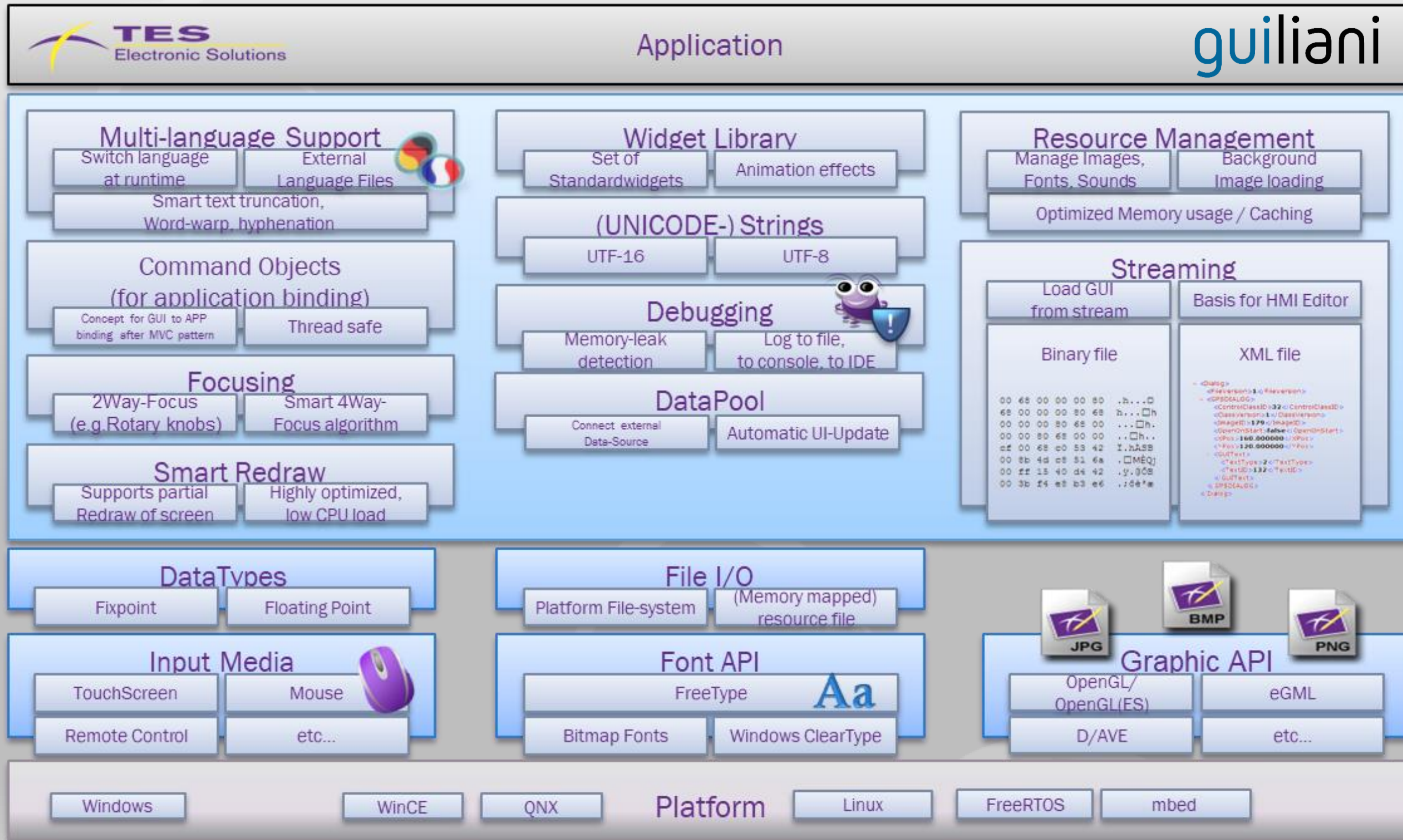


## Guiliani Technologies at a glance (2)

- 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><b>MAIN MENU</b></p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>guiliani</p>	<p><b>SLIDER</b></p> <p>✓ VISIBLE</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>BUTTONS SLIDER SLIDER guiliani</p>	<p><b>SLIDER</b></p> <p>7-50</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>BUTTONS SLIDER SLIDER guiliani</p>	<p><b>KNOBS</b></p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>KNOBS DATE/TIME GAUGE guiliani</p>																																																	
<p><b>DATE/TIME</b></p> <p>AUGUST 2020</p> <table border="1"> <tr><td>MO</td><td>TU</td><td>WE</td><td>TH</td><td>FR</td><td>SA</td><td>SU</td></tr> <tr><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td><td>1</td><td>2</td></tr> <tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr> <tr><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr> <tr><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td></tr> <tr><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table> <p>2020-08-08 06:30:51</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>KNOBS DATE/TIME GAUGE guiliani</p>	MO	TU	WE	TH	FR	SA	SU	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	<p><b>GAUGE AND WHEEL</b></p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>KNOBS DATE/TIME GAUGE guiliani</p>	<p><b>KEYBOARD</b></p> <p>USER: Password: SHOW</p> <p>User *****</p> <p>Q W E R T Y U I O P A S D F G H J K L abc Z X C V B N M &lt;&gt; 123 . Space . &lt;</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>guiliani</p>	<p><b>TEXT</b></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>
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<p><b>CAROUSEL</b></p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>CAROUSEL CONTAINER CONTAINER guiliani</p>	<p><b>VIDEO</b></p> <p> &lt;- &lt;&lt; 10 &gt;&gt; 10 PLAY PAUSE STOP</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>ANIMATION EASING VIDEO guiliani</p>	<p><b>CHART</b></p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>CHART GRAPH PLOT guiliani</p>	<p><b>SETTINGS</b></p> <p>TRANSITION: PUSH FROM TOP CHANGE SKIN</p> <p>BACKGROUND: IMAGE (NATIVE) TOGGLE NEON</p> <p>EASING: EASE-IN-OUT SINE TOGGLE FPS</p> <p>TOGGLE INV</p> <p>NATIVE</p> <p>TES Electronic Solutions</p> <p>guiliani</p> <p>GUILIANI V2.4.XXXX GFX: EGML PLATFORM: X86, WIN32, MSVC</p>																																																	

# NEW! Guiliani 2.5

## New Features:

Runtime Profiling

New dialog transitions

Rotate text by 90/180/270 degrees

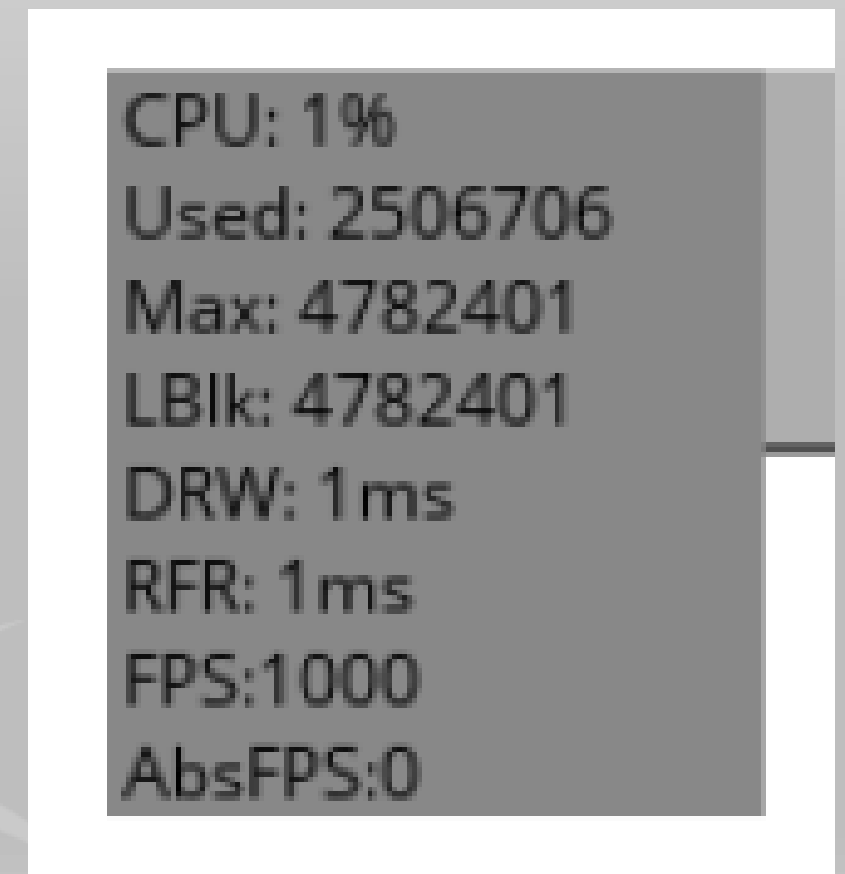
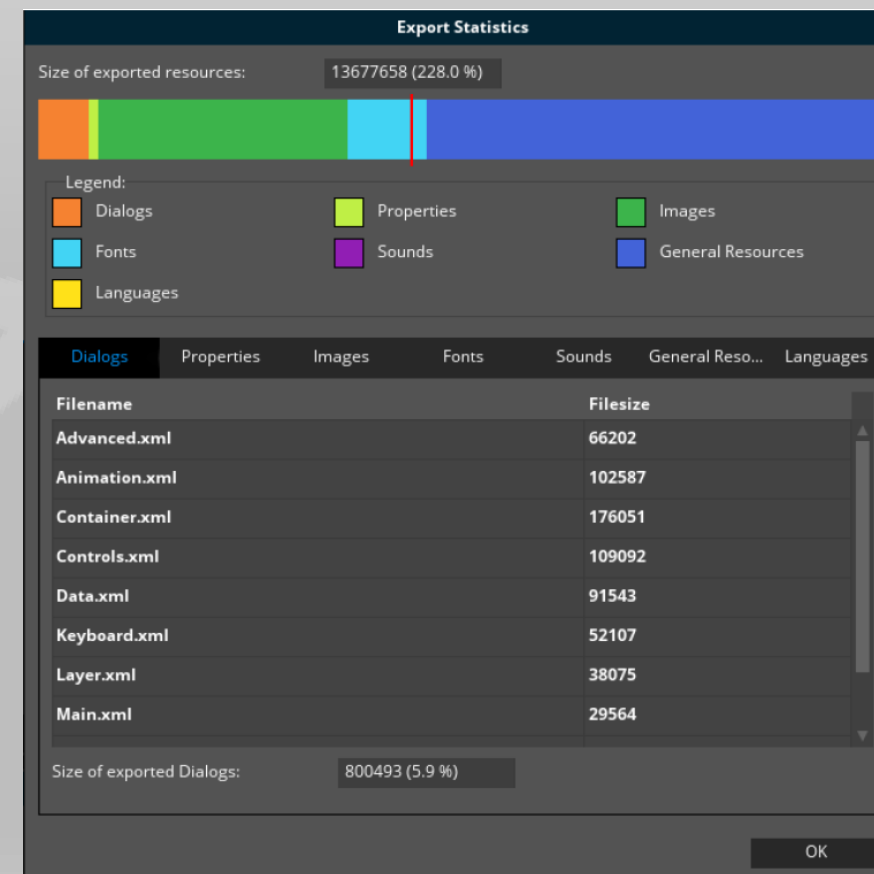
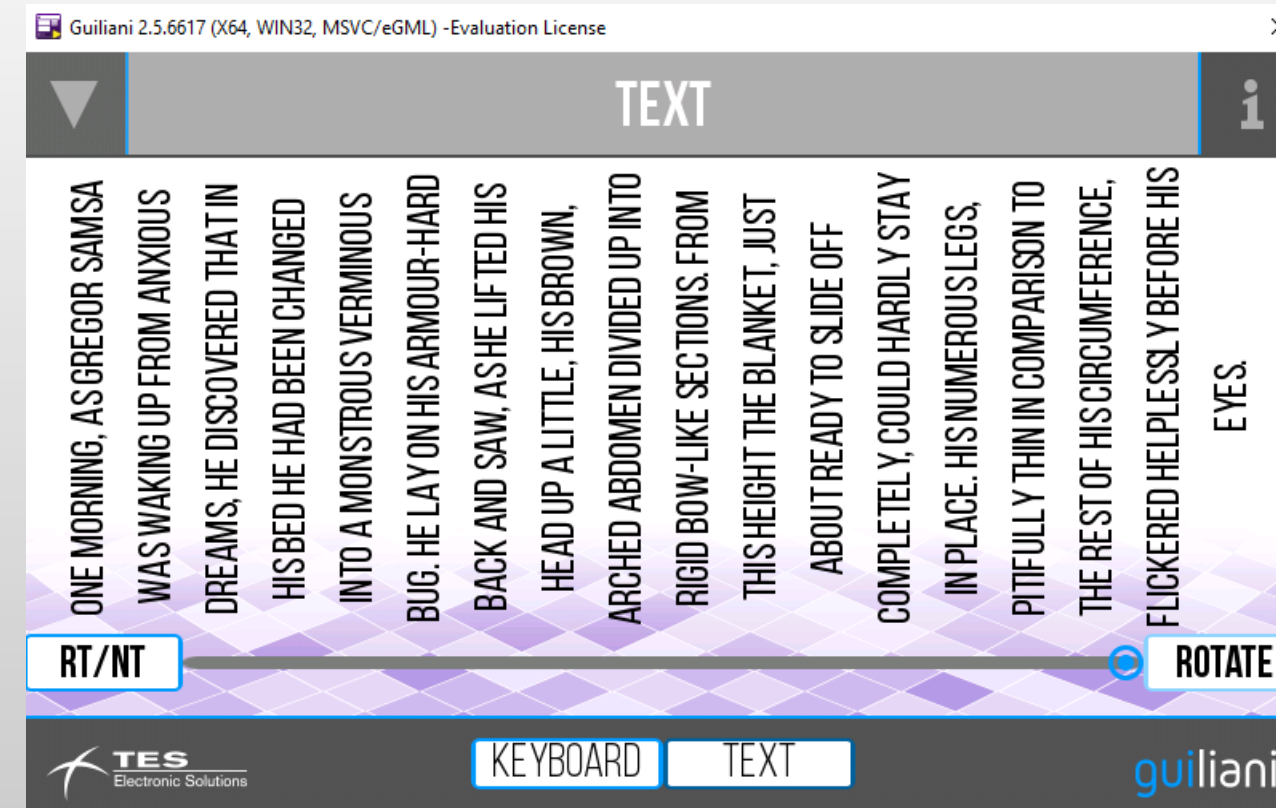
Improved on-screen key board

Keyboard layout editor

Target memory settings profiling

New detailed exports statistics

Many more...



# 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)



Courtesy of Lightpoint Medical



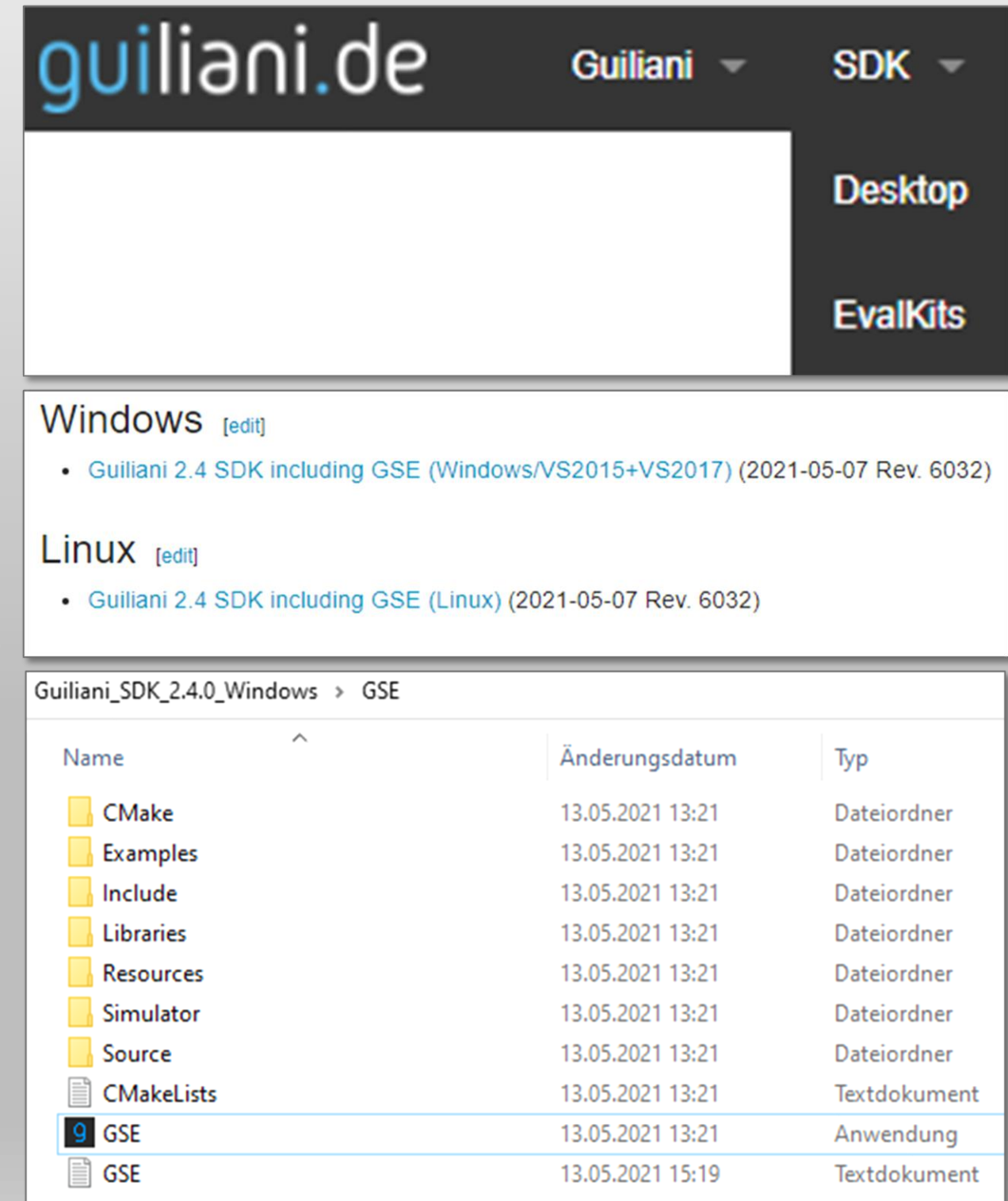
Courtesy of Medallion Instrumentation Systems

## It's easy to get your hands dirty

1. Go to [www.guiliani.de](http://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!

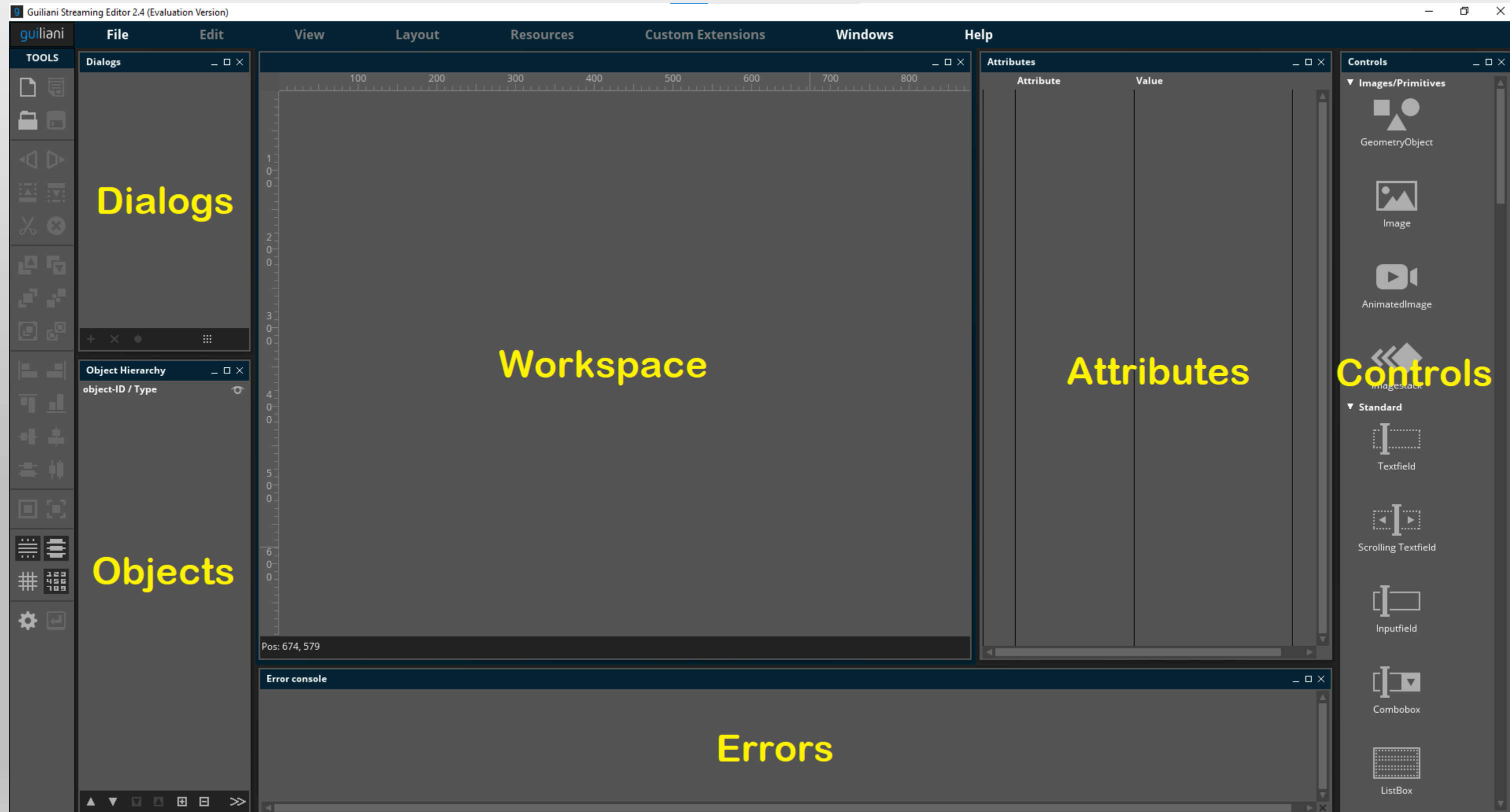
You are sitting in front of the  
Guiliani Streaming Editor (GSE) now!



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...

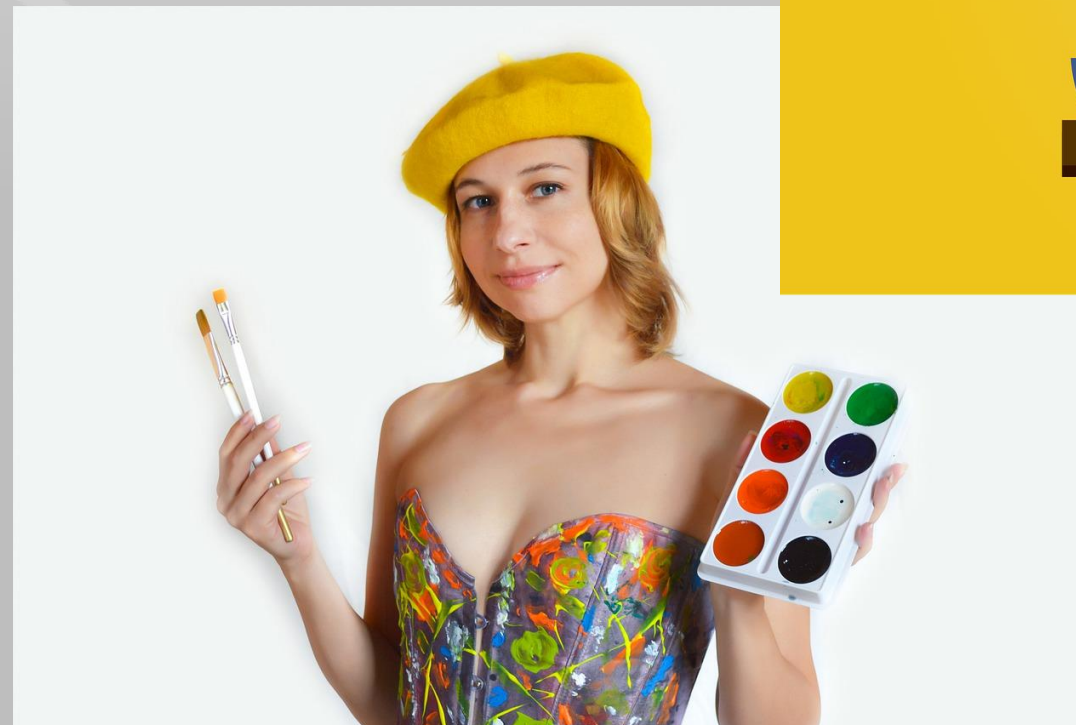
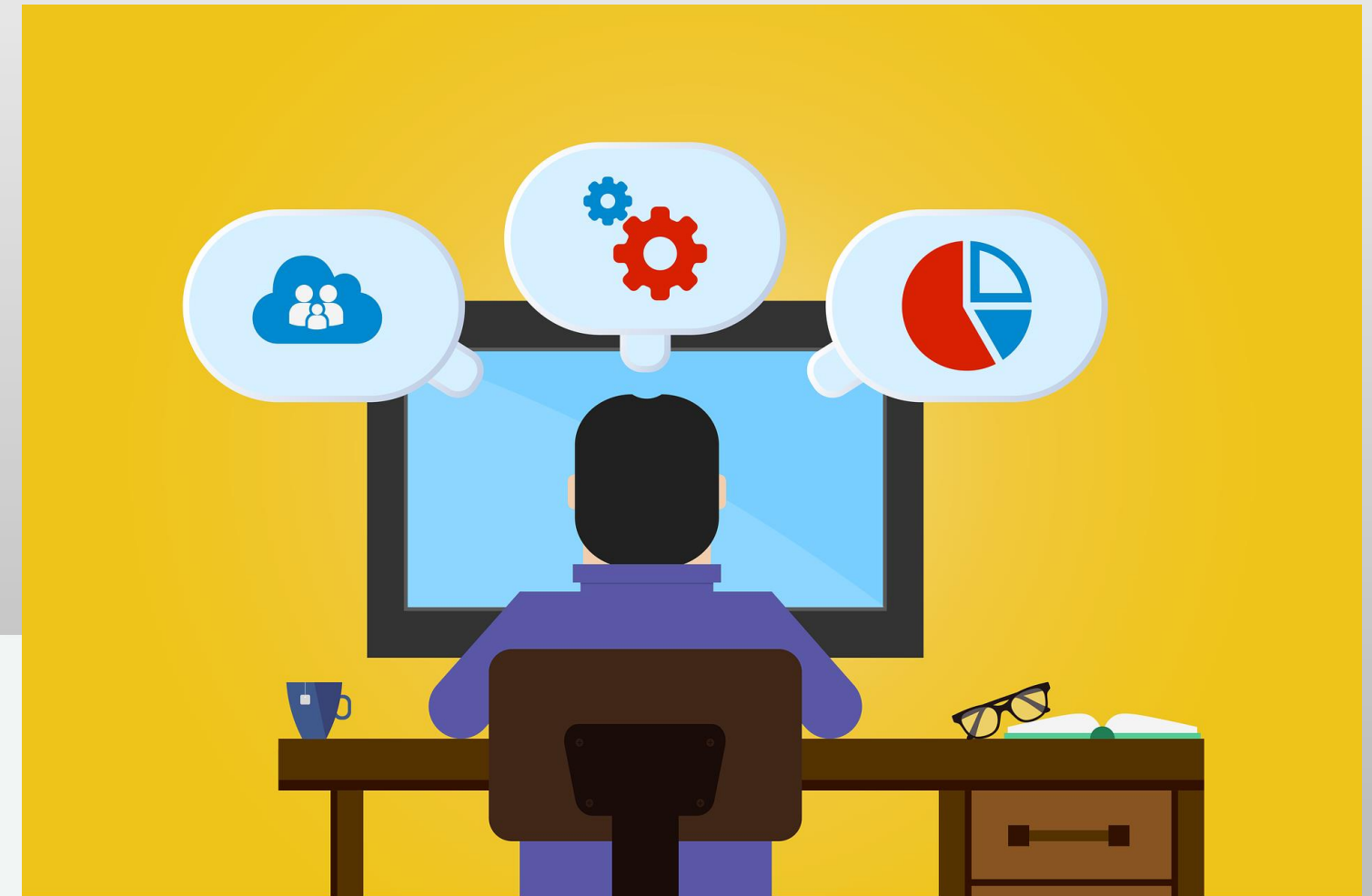


Tahir is engineer.  
Uses **Guiliani** to integrate  
Mary's artwork with the inputs  
from other stakeholders...

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!

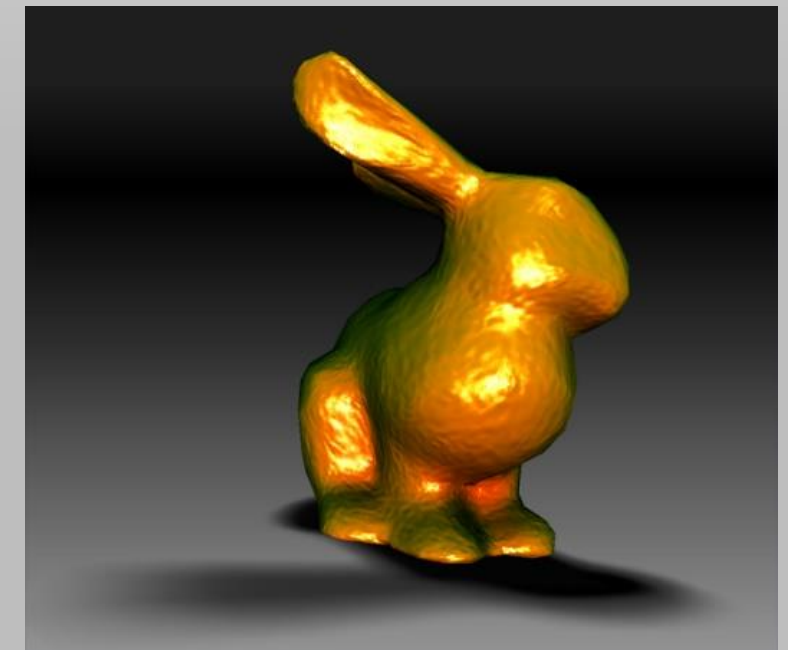


**Highest  
customer  
ratings!**

## 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:

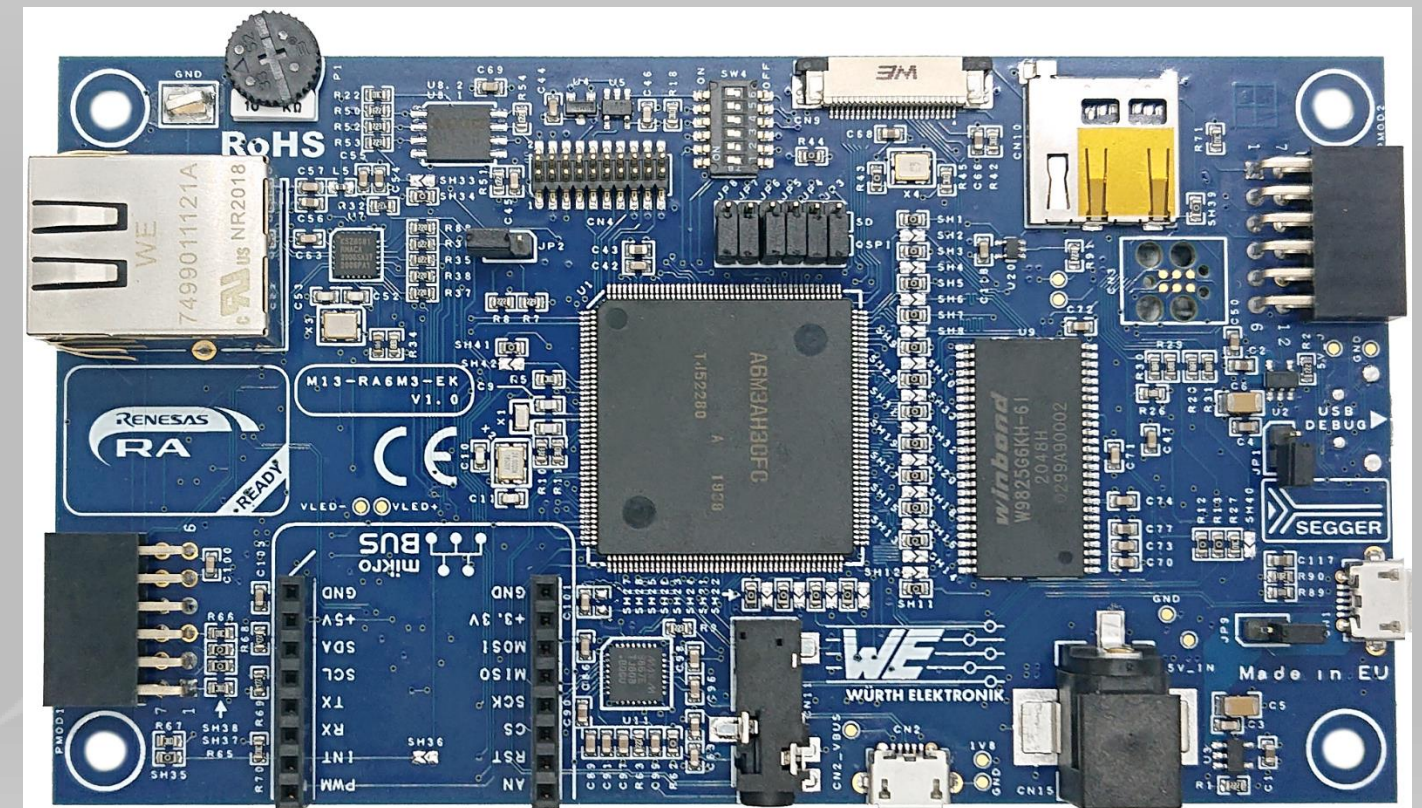
GUI-framework + GPU + Display Controller + drivers



## Guiliani Partner Highlight: M13Design (for Renesas RA6M3 MCU)

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](mailto:info@m13design.fr)

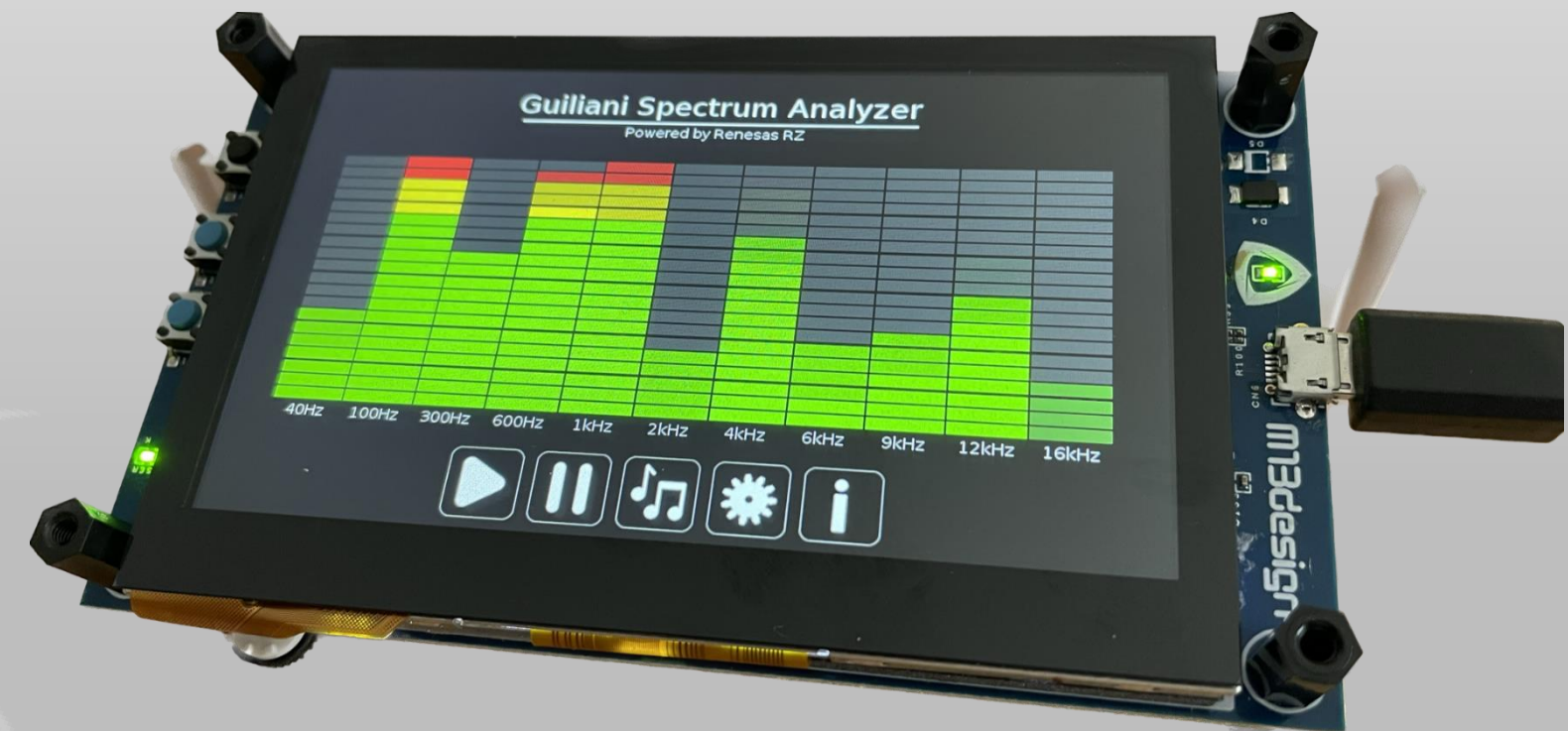
Short unboxing video: <https://youtu.be/x02L1gAE5H4>



## Guiliani Partner Highlight: M13Design (for Renesas RZ/A hybrid MPU)

1. Latest addition to our cooperation with M13Design
2. Uses the powerful **RZ/A2M with 528MHz Cortex A9 MPU**  
4MB internal high-speed RAM, 32MB external RAM,  
64MB ext serial Flash and more...  
**4.3" 800x480 TFT** with capacitive touch  
Lots of connectivity and on-board debugger...
3. Available! Click [here](#)
4. **Highlight:** Supported by „Prepaid by Renesas“  
therefore a Guiliani-lite license can be obtained  
for free (T&C apply).
5. Contact: [info@m13design.fr](mailto:info@m13design.fr)

Video impression: <https://youtu.be/Pq9fn01pTvs>



## 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](http://www.emtrion.com)
4. **Highlight:** emSBC-Argon available in volume off the shelf for super-rapid prototyping!
5. Contact: [sales@emtrion.de](mailto:sales@emtrion.de)

Short video impression: <https://youtu.be/wMBXPtKBnoU>

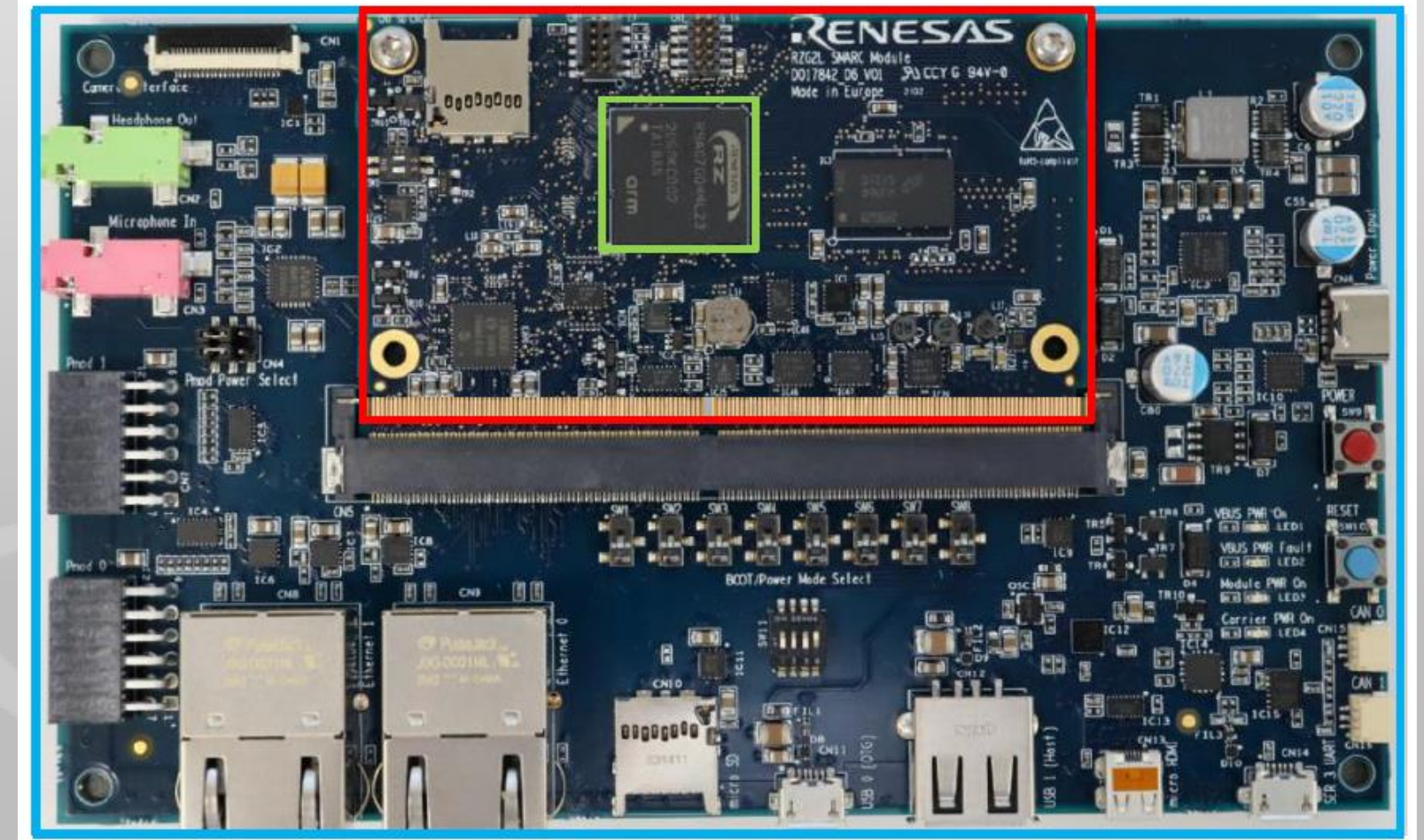


## Guiliani Partner Highlight: Renesas RZ/G2L

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](http://www.guiliani.de)**
4. Contact: [info@guiliani.de](mailto:info@guiliani.de)

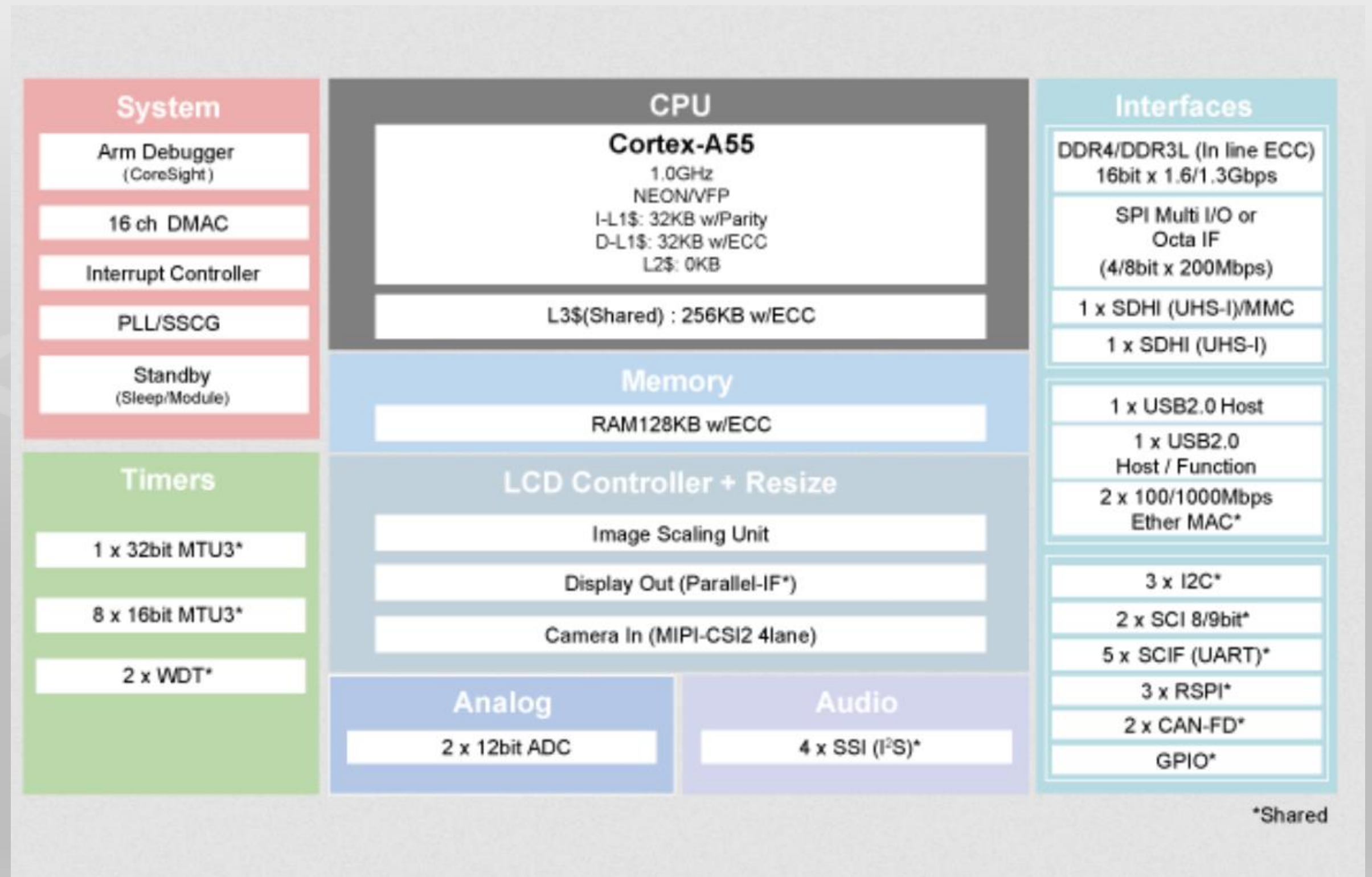
Short video impression: <https://youtu.be/1la6NwArABY>

**RZ/G2L SMARC v2.1 Module board + Carrier Board**  
(Made by Renesas Europe)



# Guiliani Partner Highlight: NEW RZ/A3UL

1. Low cost MPU  
Augments RZ/A family  
upwards
2. **Quick boot by  
virtue of RTOS focus!**
3. **Guiliani 2.5 SDK  
available now!**
4. Beta Customers  
Wanted Now!  
Contact:  
[info@guiliani.de](mailto:info@guiliani.de)



Short video impression: <https://youtu.be/ck46U5zhy-M>

## 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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+491734181348



info@guiliani.de



www.guiliani.de

Thank you!

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

