

Top Five Best Practices Developing Embedded GUIs in 2022

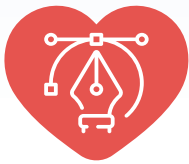
Whether you're developing an [automotive instrument cluster](#), a [security keypad](#) or a [medical device](#) display, there are numerous challenges that arise from the time you receive your design decisions and plan from marketing to when your device goes to production.

Altia has helped [companies all over the world](#) deliver beautiful, feature rich embedded graphical user interfaces (GUIs) for production—and we have collected a series of best practices for getting your best next generation GUI on the road, on the store shelf and in the hands of your customers.

In this eBook, we'll outline these best practices and how to apply them using the production-proven [Altia GUI development solutions](#).

1

Start with Your Artist's Artwork



Altia lets your designers create in the tools they love.

[> Learn more](#)

Customers want gorgeous, rich graphics for their embedded devices—and your marketing team and artists worked hard to create their vision for your new product. With some GUI development projects, engineers look at those concepts as mere suggestions. The final product looks much different and definitely less attractive than the original concept.

Not so with Altia. Altia lets your designers create in the tools they love—Photoshop, Illustrator, Sketch, Blender, Maya, 3ds Max and more. Your artists can even plan a GUI with layered 2D and 3D graphics for a truly high impact user experience. Altia can make it happen.

Be smart with your art.

- Let artists work in their favorite third-party design tools
- Create concepts with a combination of 2D and 3D graphics
- Maintain the fidelity of your carefully crafted product vision
- Get those artists pixels into your production device

Prototyping



2

It's not enough to have a beautiful GUI design. Every button, every slider, every menu needs to behave as your user expects. A GUI prototype offers a smart, straightforward way to test that your user interface behaves intuitively. It's also the best, fastest way to make sure that carefully researched and planned user experience (UX) of your product meets the expectations of your marketing team, your executives and your customers.

By prototyping your GUI in Altia and then testing it with all the stakeholders for your project, **you can tweak and perfect your [GUI model](#) until it is exactly how you want it.** You can then leverage that same Altia GUI model throughout the design process through to production.



**We start with
3D artwork
and end on
production-grade
hardware—all in
just 3 minutes!**

[> See How](#)

Give your GUI a workout.

- Use an interactive GUI model for more successful validation
- Test early with all stakeholders for best UX
- Save time by using that tested GUI model through to production
- Find errors and trouble spots early – and save money

3

Run on Reference Hardware



Learn how this automotive OEM has taken ownership of the branded look-and-feel for their instrument clusters with Altia.

> [Read case study](#)

It's important to get your GUI running on hardware—maybe even a couple of different reference boards in your price range—early in your project timeline to be sure that your product will perform the way you planned it. Running on hardware early allows your team to evaluate and tweak your GUI to find the proper balance of performance and GUI features like animations, 3D effects and more. This is the time to understand if your hardware can support all the features your marketing team specified and make key decisions to deliver the most GUI your right-priced hardware can bear.

Skipping this step in the GUI design process is one of the main reasons that projects end up with high development costs, production delays and poorly performing GUIs.

Fortunately, **Altia makes it easy to test your GUI on hardware during development.** Our [DeepScreen code generator](#) automatically generates C code in just minutes so that you can test early and test often—even in your product's use case environment.

Get your code on.

- Use reference hardware in your price range to test features and performance
- Try on [different hardware](#) in your budget to find the right fit
- Test your entire UX upfront – not just the pieces and parts
- Make sure animations and color depth perform as planned
- This is also the same model that goes to production – you don't start over again



Collaborate in the Cloud

4



It's important to make sure your GUI development team remains on the same page with the same tools, the same GUI model, the same design elements and more. Different or missing artwork, different tool versions, missing software components—those are prime reasons for miscommunication. Especially with team members working remotely or in distributed offices, it can be a challenge to keep everyone unified.

With Altia, it's easy to keep your team designing and developing in the same direction. **Altia GUI software is now available in the Cloud, making team-based projects easier than ever.** Not only do we have downloadable products, code generation targets, font modules and more, but we also have in-tool connection to product documentation, the Altia knowledgebase and support requests.

Altia gets your team fast-tracked with Altia Projects. These are pre-configured, customized project templates that includes your GUI model, plus animations, rule sets and all the other pieces tailored to your team. Altia Projects are tailored to your reference hardware, so only the features and functionality compatible with that device are revealed in our GUI editor. [Request a demo](#) to see Altia in action.



See Altia software at work in a variety of different GUIs and a vast array of silicon.

[> See our demos](#)

Altia enables cloud-based success.

- Get project-specific setup tuned specifically for you
- Share complete projects using encrypted file
- Organize and swap HMI assets easily with your team members
- Design and edit using multiple document interface
- Generate code in the Cloud for early hardware testing or production

5

Design to Flex, Scale and Reuse



**Medallion leverages
Altia's flexibility
and processor
efficiency to develop
GUIs for motorcycles
and more.**

[> Read case study](#)

Let's say that you're a GUI developer for a home appliance company. You design your first embedded GUI for your top-of-the-line washing machine, and it becomes a market winner. Your executive team wants to extend those embedded GUIs to your lower cost model—and they want them out in production in your next generation product.

You don't need to start over! **With Altia, you have everything you need to get this new GUI developed quickly.** Starting with your original GUI model, you can scale the GUI size to accommodate smaller, less expensive displays for that lower cost washing machine. Because your BOM cost constraints might require a shift to a less expensive chip, you're able to modify your GUI design in Altia to accommodate the features of your hardware to get a great GUI for that next model.

And, if you find yourself stuck with a [chip shortage](#), **Altia offers the flexibility to leverage your existing GUI model for plentiful and even lower cost silicon.**

Design Once. Deploy Everywhere.

- Don't start from scratch. Instead, build on progress with your current GUI model.
- Reskin and resize your GUI to accommodate different product lines and brands.
- Altia offers the flexibility to deploy on a range of chips.
- This gives them flexibility to move away from hard-to-find chips toward plentiful, lower power silicon.



Altia – Proven Solution for Production Embedded GUIs

Altia offers a single source solution to deliver embedded GUIs with an optimized UX and best performance on your hardware. Designed into over 100 million embedded devices and counting, we help companies worldwide to design, develop and deploy brand-defining GUIs for their products.

How can we help you?

- Want to build a gorgeous GUI with custom graphics? [Learn about Altia Design.](#)
- Need to deploy perfect code for production? [Learn about Altia DeepScreen.](#)
- Looking for expertise to help you get your first project going? [Our Services Team is ready.](#)



If you're ready to get your best GUI
to market with us today, [let us know.](#)

Contact Us

For more information about how Altia can help you get your next great GUI into production, visit www.altia.com or email info@altia.com.

Altia, Inc., World HQ
Colorado Springs, USA
Tel: +1 719 598-4299

Altia Europe GmbH
Frankfurt/Neu-Isenburg,
Germany
Tel: +49 6102-7485-250

Altia Japan KK
Tokyo, Japan
Tel: +81 3-6863-6349

Altia Korea LLC
Seoul, Republic of Korea
Tel: +82 10-5026-0744