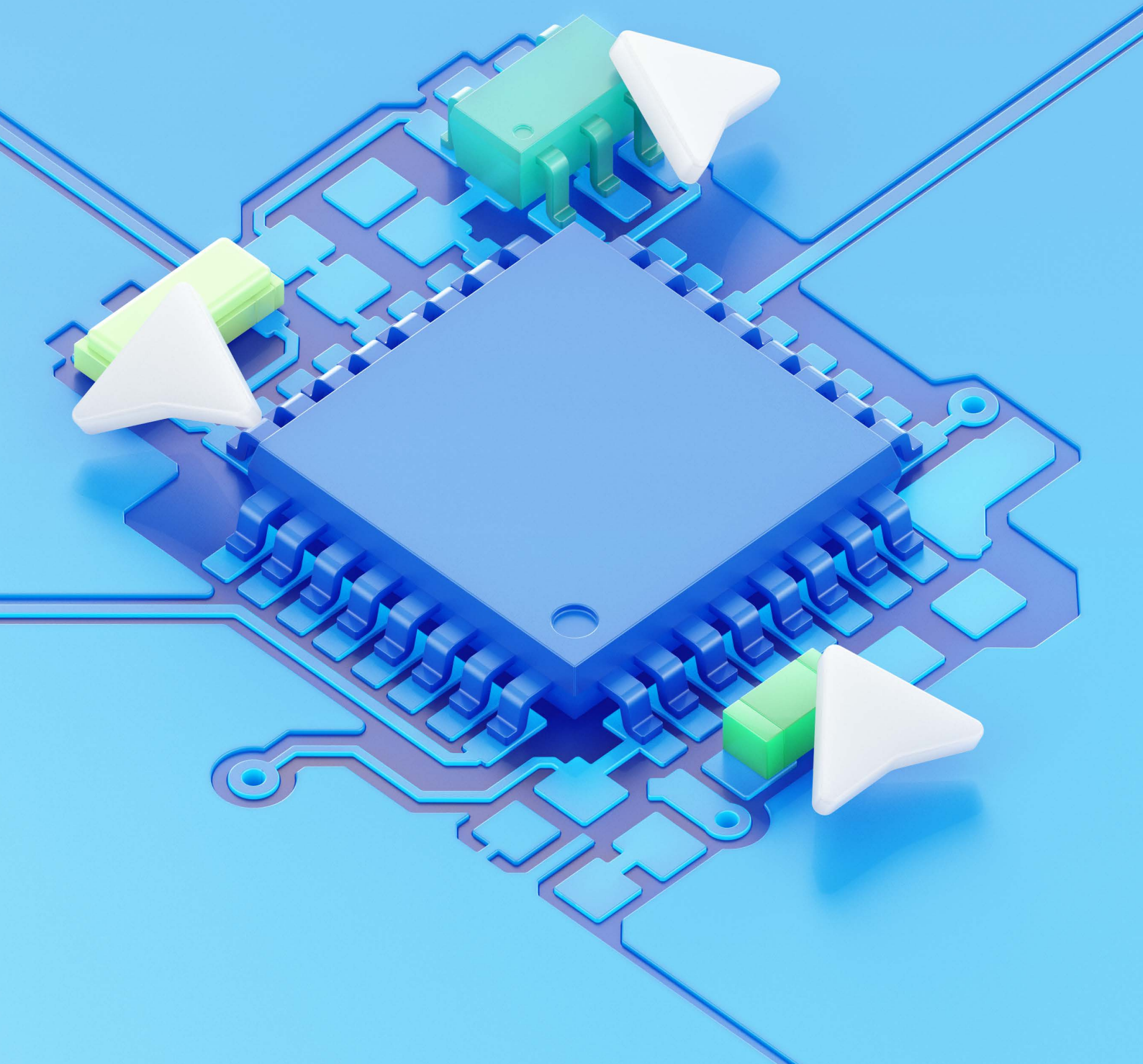


Altium[®]

QUICK GUIDE

PCB CoDesign



Introduction

In the realm of PCB design, efficiency and precision are paramount. The new PCB Layout Replication tool is a game-changer, addressing the tedious, error-prone methods of the past. Unlike the convolutions of traditional techniques, this innovative feature simplifies the replication process, eliminating the need for manual checks and intricate workarounds that once bogged down progress.

This isn't merely a tool; it's a revolution in PCB design. By enabling accurate, hassle-free duplication of layouts, designers can focus more on innovation and less on time-consuming tasks. It's not just about working faster; it's about enhancing accuracy, flexibility, and the overall design process. Say goodbye to the cumbersome old methods and embrace the streamlined future of PCB Layout Replication.

Benefits of Altium Designer PCB CoDesign



Accelerated Design Process

With instant project status updates and the ability to merge changes seamlessly, the collaborative environment significantly speeds up the PCB design workflow. This means faster time-to-market and a competitive edge for your engineering team.



Flexible Division of Labor

Team members can self-assign tasks based on areas on the board, layers, or specific components, while the built-in comment feature facilitates effective communication. This autonomy and enhanced communication allow engineers to leverage their individual expertise, ensuring high-quality outputs.



Conflict Resolution

In the case of design overlap, users can decide to keep local changes or apply the new commit. By doing so, conflicts are addressed directly and resolved swiftly, leading to a smoother workflow and less time lost to disputes.



Real-Time Update Notifications

Notifies users when a new commit is available, promoting synchronicity in the team. Everyone can operate with the most current design versions, minimizing discrepancies and potential reworks.



Clear Visibility of Changes

By showing the differences between design versions, transparency among team members is enhanced. Better understanding of each other's contributions leads to effective communication and reduces the likelihood of misunderstandings.



Streamlined Work Process

Efficient comparison between reference and current state of the design ensures significant changes aren't overlooked. This systematic approach maintains organization in the workflow and helps teams keep track of progress.



Improved Accountability

Tracks changes made by individual team members, encouraging personal responsibility for contributions. This leads to a higher standard of work and an increased sense of ownership among team members.



Rapid Identification of Discrepancies

Highlights differences between reference and new commits promptly. Early error detection allows for quick corrections, reducing delays in the project timeline.



Fosters Innovation

The collective approach encourages exchange of ideas among team members. The shared environment cultivates creativity, pushing the boundaries of conventional solutions.

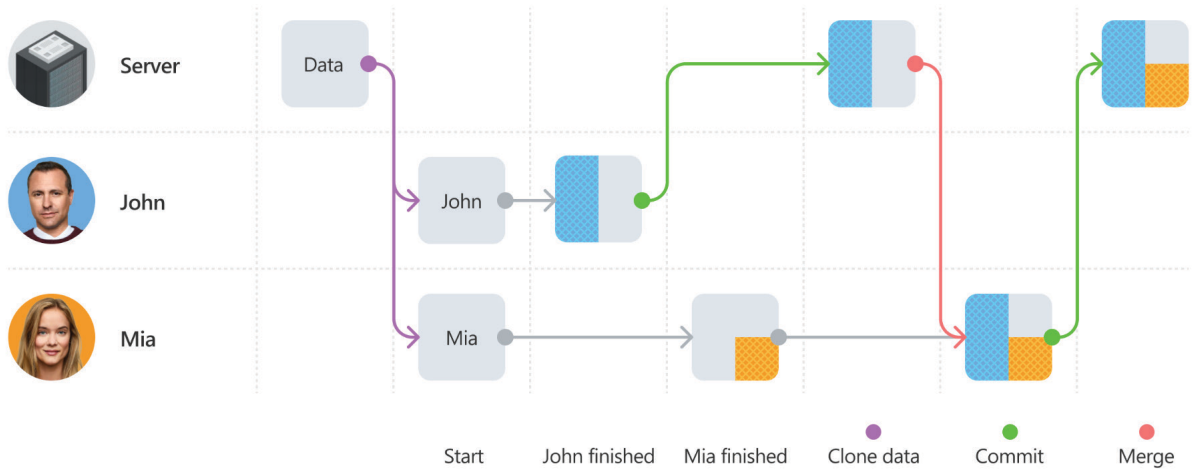


Better Final Product

By improving collaboration, promoting flexibility, and managing conflicts efficiently, a superior and more refined final product is achieved. This holistic approach ensures that the final PCB design upholds the highest quality standards.

PCB CoDesign Editing Use Case

PCB CoDesign allows any user with access to a project in the A365 workspace or Altium Enterprise Server to commit to a single, master branch. Meaning that multiple users can work together on the same project, deciding amongst themselves how to divide the work— be it by areas on the board, layers, group of nets, or components. Communication is facilitated through comments, and users receive notifications whenever a new commit is available on the server.



Work flow of collaboration between two designers

The following is one example of how PCB CoDesign can be employed in a real-world application.

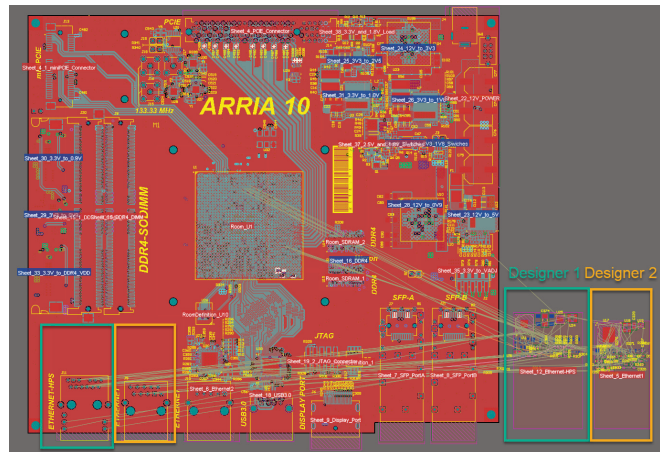
Scenario:

Two designers are collaborating to complete the miniPC project, specifically the Ethernet blocks. Each of them has a designated area and, thanks to the new PCB CoDesign tool, they can edit the PCB simultaneously without worrying about losing their progress.

1. Starting point

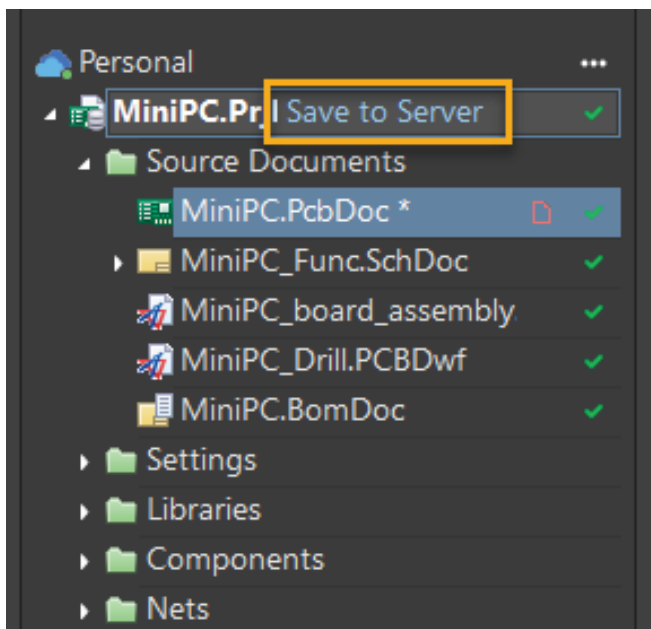
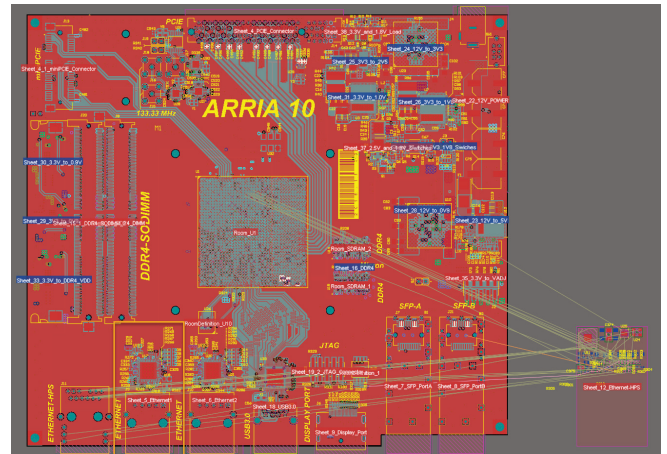
Both designers start by copying the current version of the project from the Altium 365 server to the local disc.

After determining who is responsible for which part, for example, by using comments and assigning it as a task in-progress, work on the design can begin.



2. Finishing the edition by designer 1

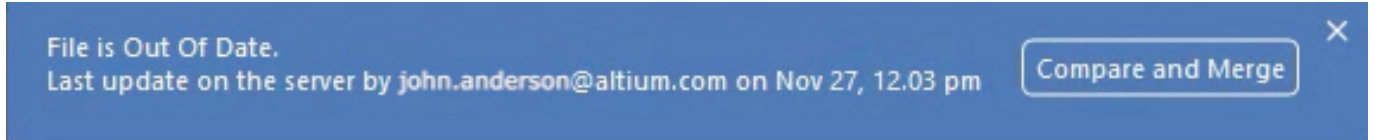
Designer 1 has completed his work and is committing his changes to the Altium 365 server.



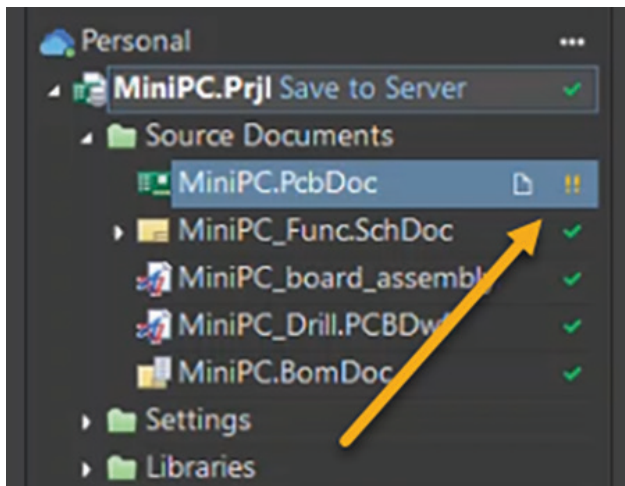
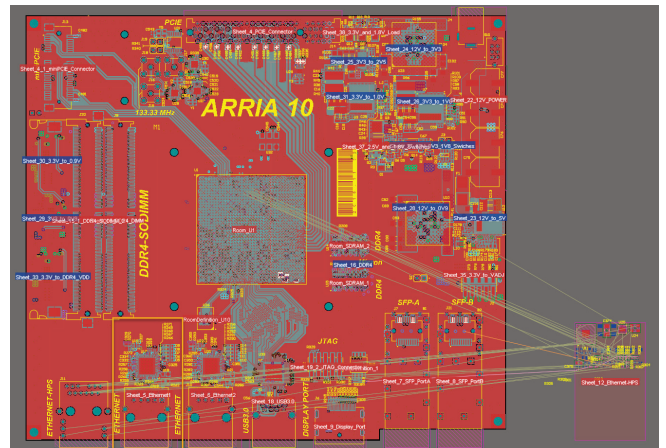
The version that is committed first will be used as a reference for comparison by the PCB CoDesign tool.

3. Finishing the edition by designer 2

In the meantime, designer 2 also started editing the PCB and made changes to his part, but at the moment when a newer version of the project appears on the server, a message about changes made by another user will appear at the bottom of our project.



Now, with PCB CoDesign, designer 2 can continue his work without having to update the PCB, and he will commit his modifications to the server when he is finished.



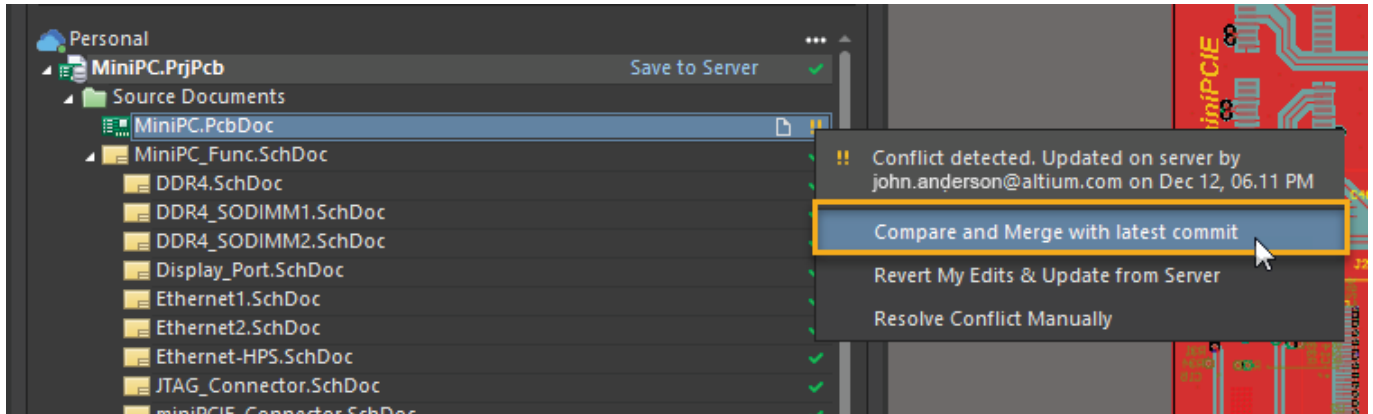
As you can see, designer 2's part is completed while designer 1's part remained unchanged.

After saving the changes locally, an icon (!!) immediately appears indicating a conflict with the version on the server.

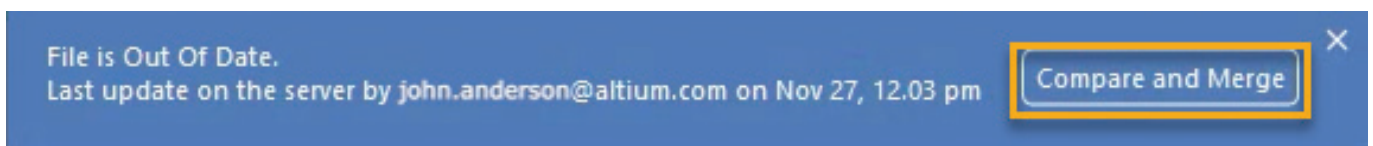
4. Merge

In order to avoid losing changes, designer 2 can now merge the two versions of the projects:

- by left-clicking on the **!!** icon and choosing “**Compare and Merge**” with the latest commit.

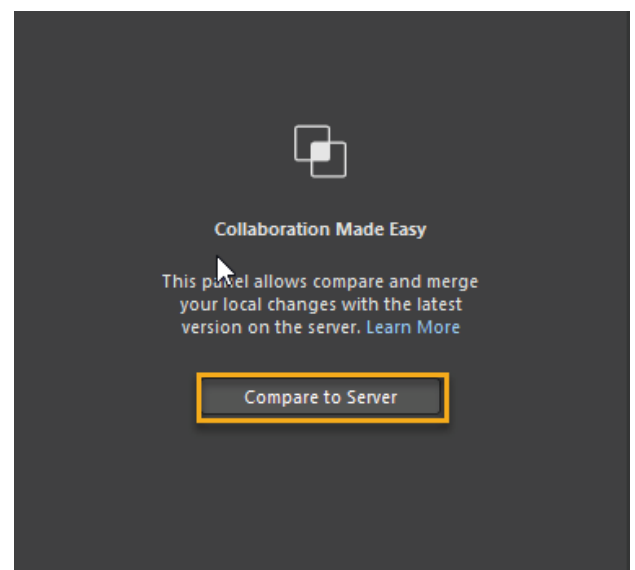


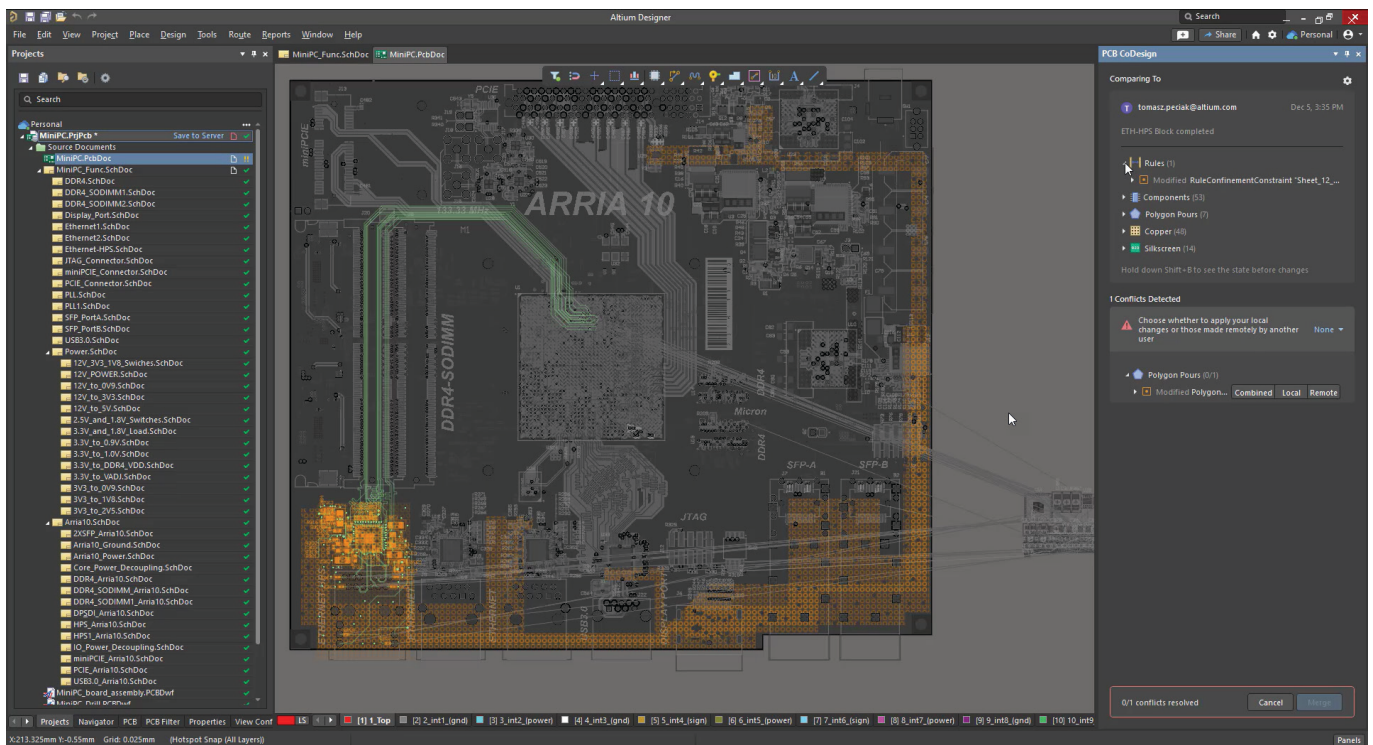
- by clicking on the **Compare and Merge** button, on the blue notification at the bottom of the design



- by clicking on the Compare to server

Now, the new functionality will display all modifications against the version from the server committed by designer 1.

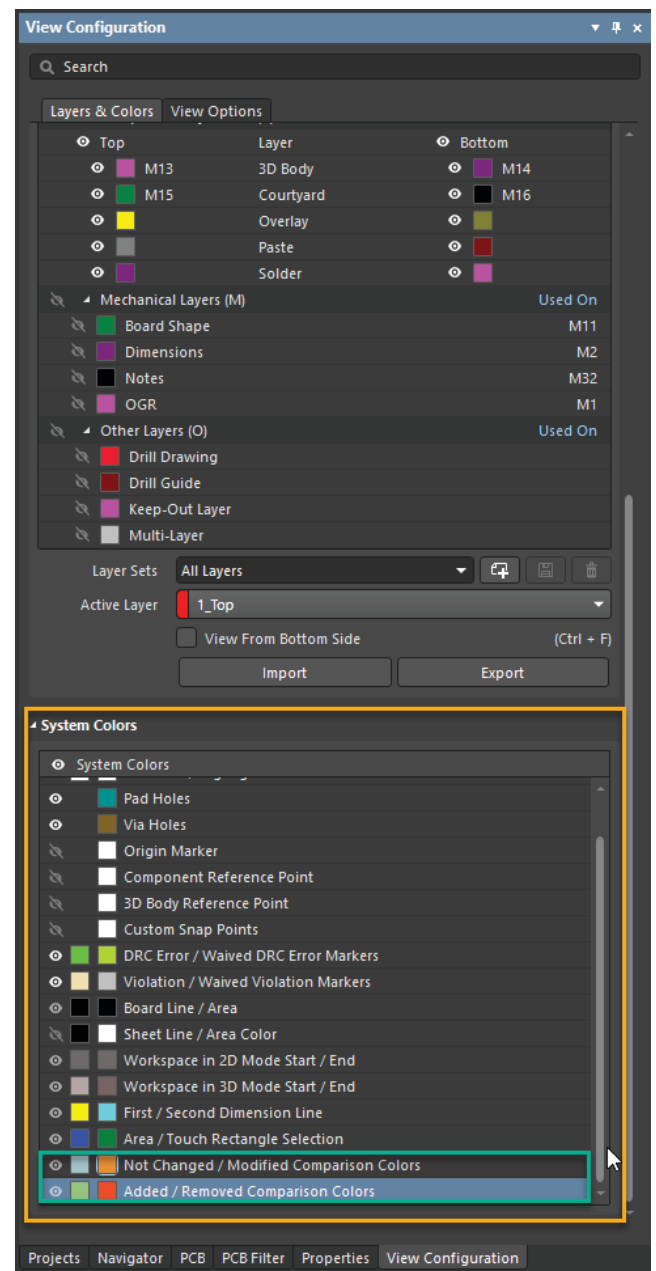




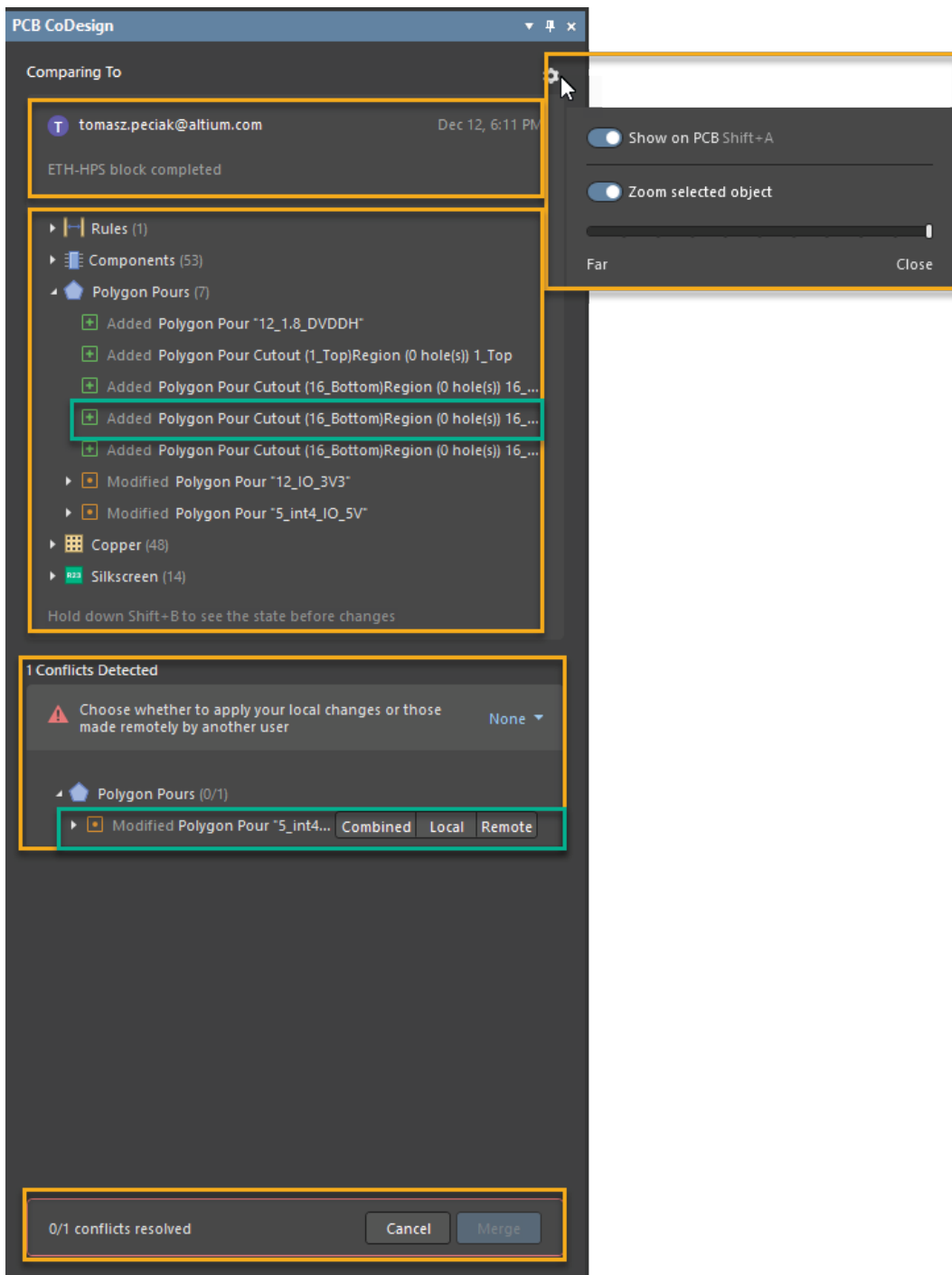
Differences are highlighted by default in the PCB view using colors:

- added objects
- modified objects
- removed objects

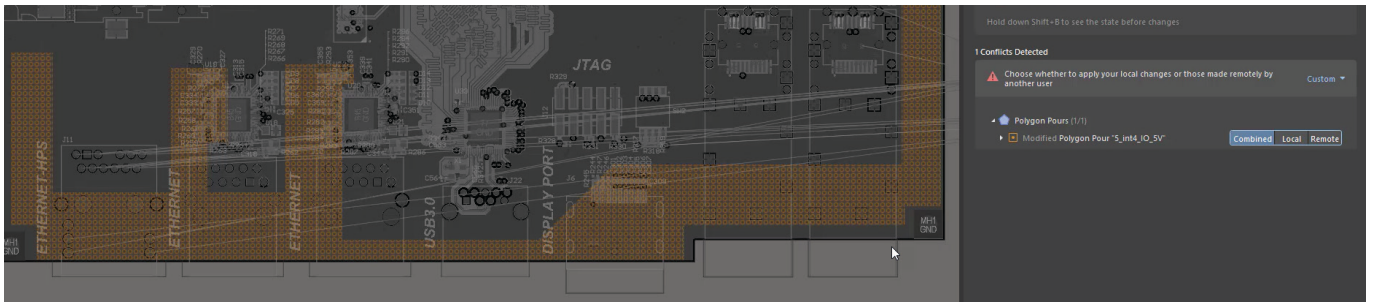
These colors can be customized as needed in **System Color** dialog in **View Configuration** window:



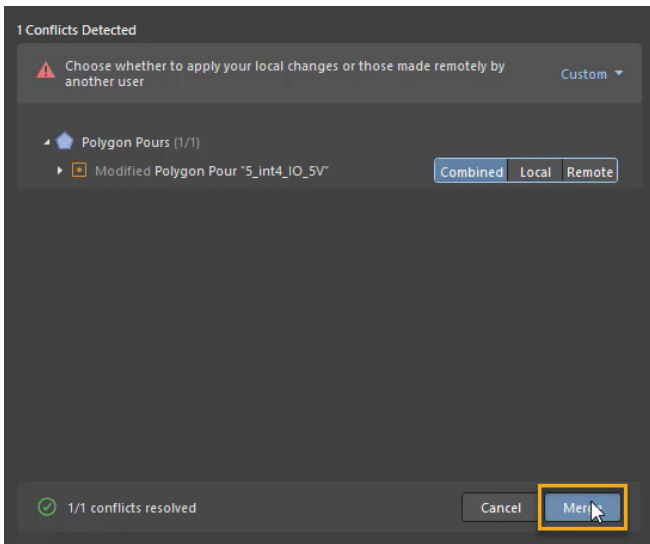
PCB CoDesign dialog:



Conflict and merging:

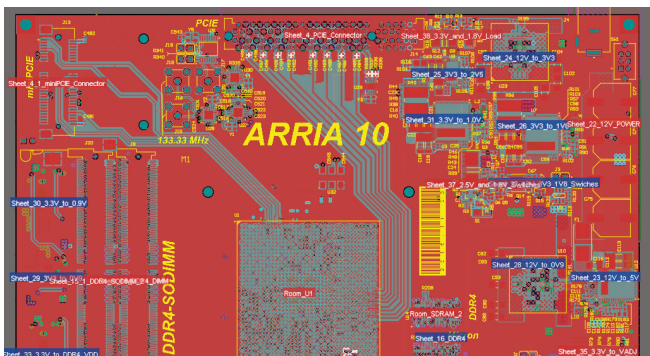


When you go to the conflicts section, you can highlight which element has been edited by both designers and choose which version you want to select.

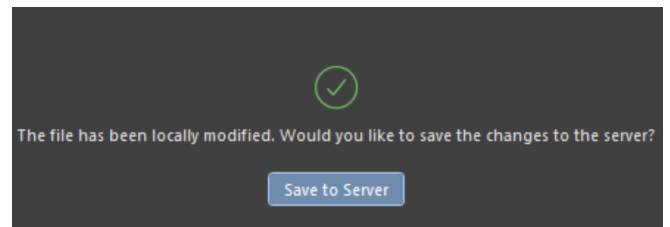


After choosing which version you want to keep, click Merge to merge the two projects.

Merged version:



The two projects have been merged and can now be saved to the server:



Conclusions

PCB CoDesign significantly speeds up the design process by allowing engineers to effortlessly and accurately review changes made by other team members. This eliminates the need for manual reconciliation, ensuring that no progress is lost. The merge function also streamlines the incorporation of these changes, making the design process more efficient.

The conflict resolution feature of PCB CoDesign enhances the design process by efficiently managing overlaps in changes. This not only speeds up the resolution of potential disagreements but also ensures that the best design decision is made.

PCB CoDesign promotes transparency and accountability among team members by clearly displaying changes and attributing them to individual users. This encourages personal responsibility for contributions, leading to higher quality work and a more cohesive team dynamic.

Altium Designer's implementation of PCB CoDesign underscores its dedication to providing users with sophisticated, detail-oriented tools for electronics design. This reaffirms its standing as a leading software solution in the electronics industry, continually evolving to meet and exceed user needs.