

# SVG in Fritzing: A Case Study

by

Jonathan Cohen - [jonathan@fritzing.org](mailto:jonathan@fritzing.org)  
Mariano Crowe - [merunga@fritzing.org](mailto:merunga@fritzing.org)  
Brendan Howell - [brendan@fritzing.org](mailto:brendan@fritzing.org)



# SVG in Fritzing: A Case Study

or...



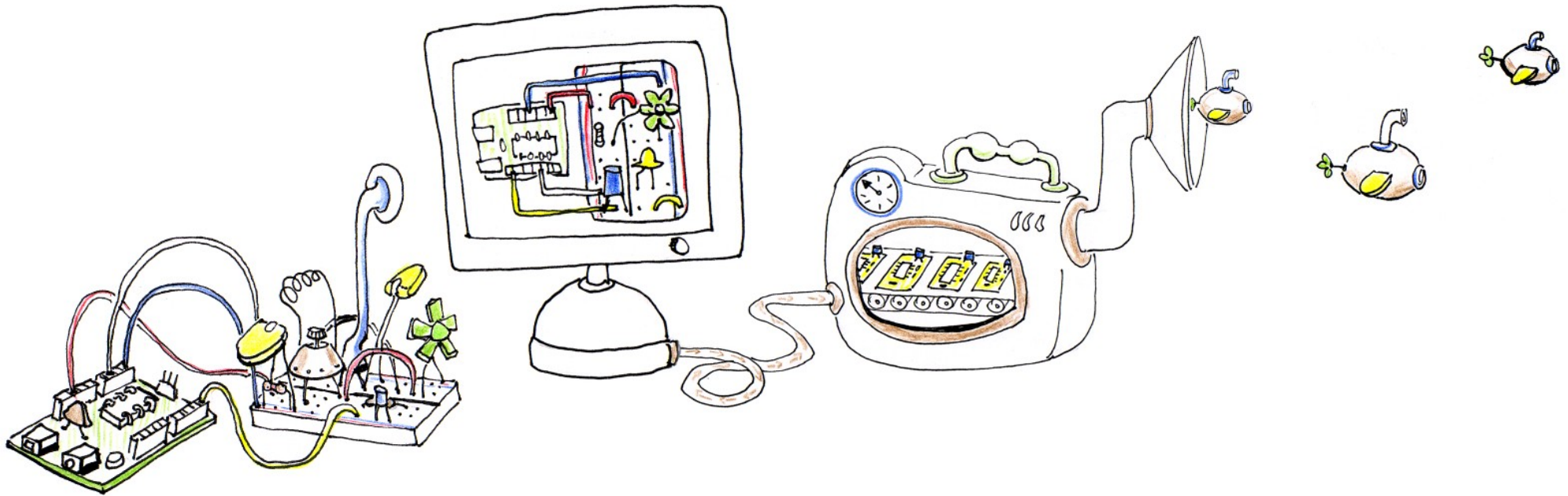
# SVG in Fritzing: A Case Study

or...

**SVG and Fritzing:  
A Love/Hate Relationship**



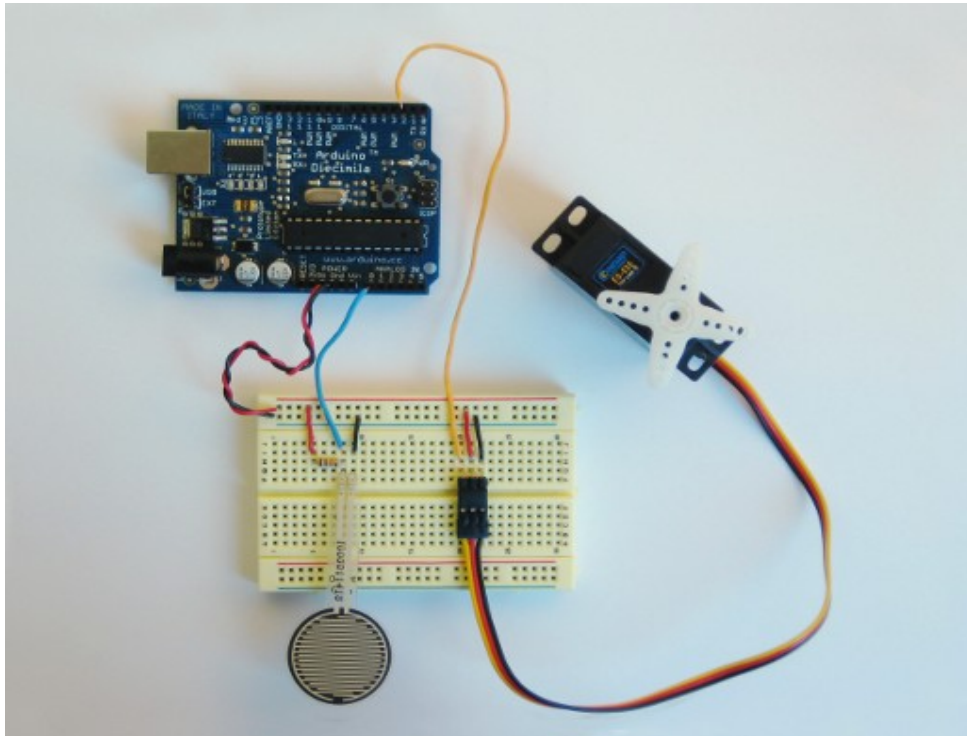
# What's Fritzing?



From Prototype to Product

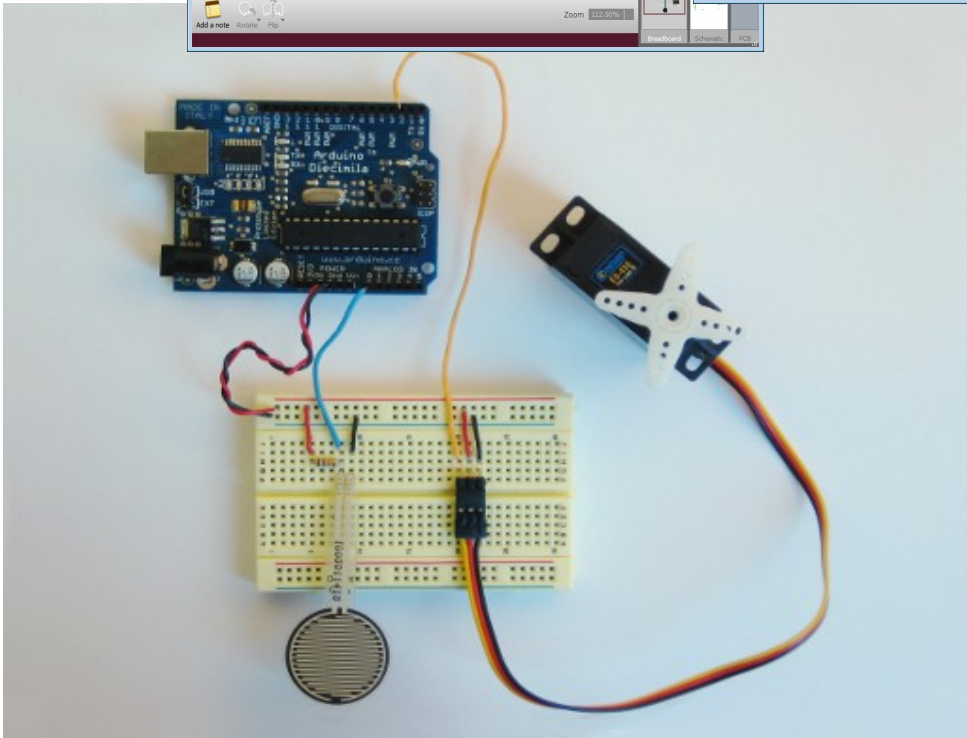
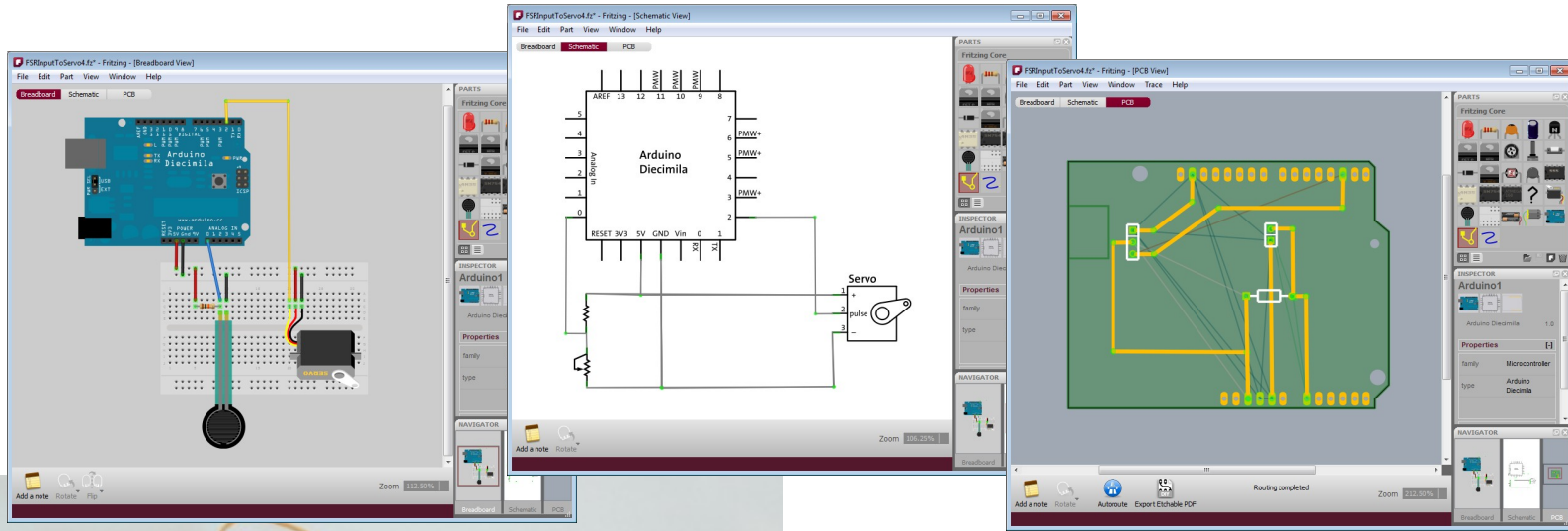


# What's Fritzing?



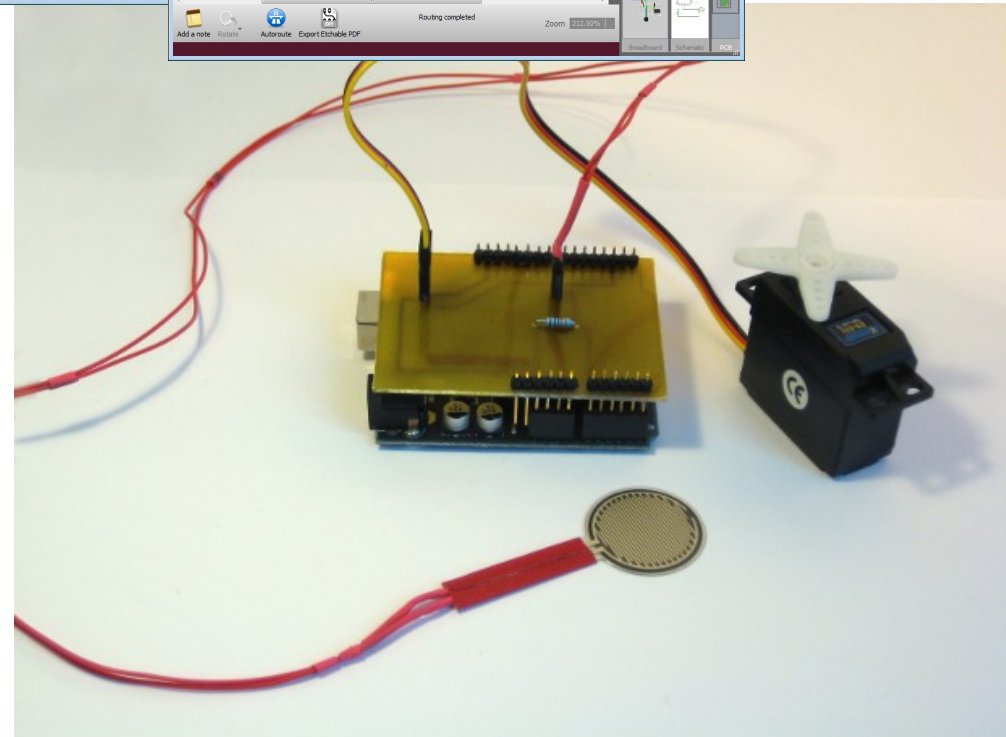
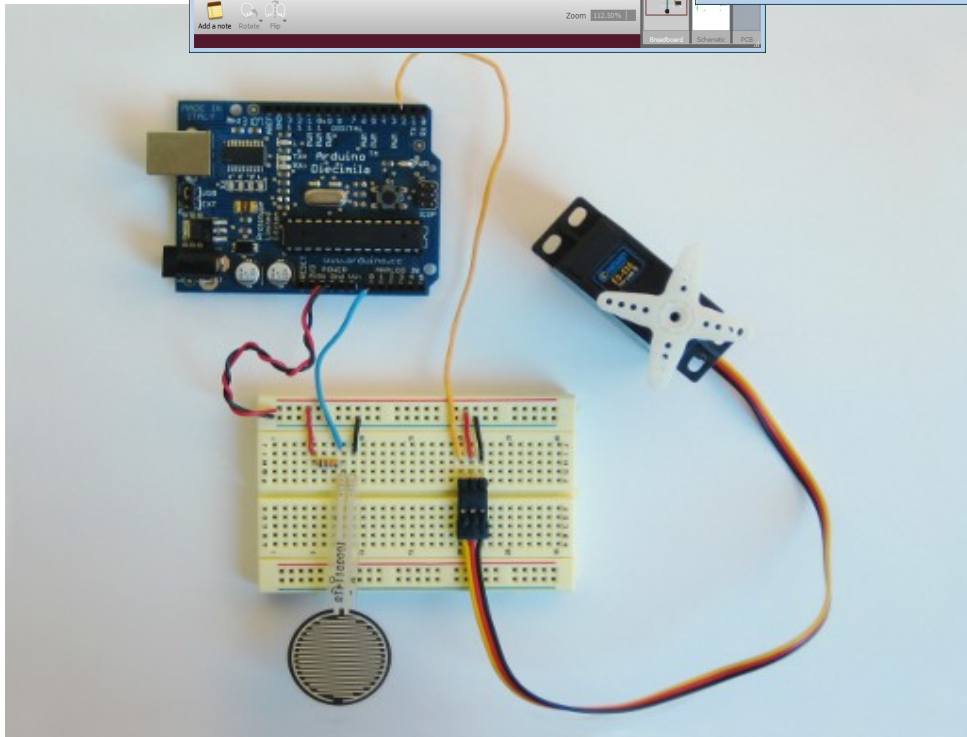
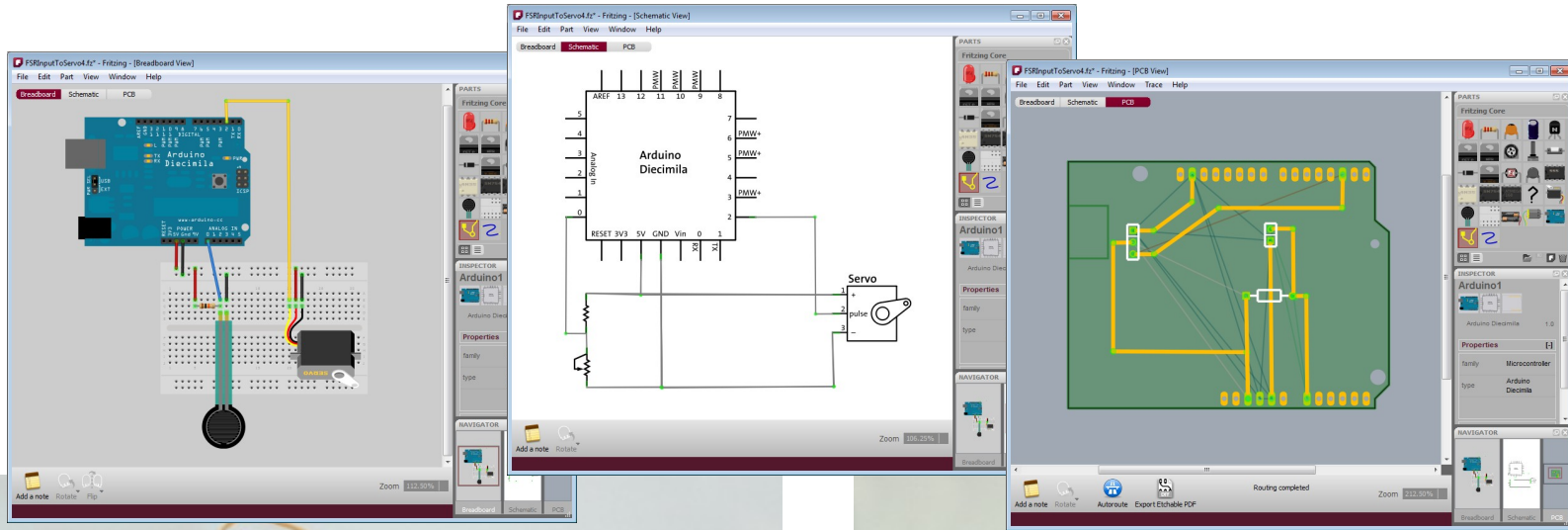


# What's Fritzing?





# What's Fritzing?





# Why SVG for Fritzing?

Bitmaps:

- Poor performance
- Aliasing artifacts when scaling





# Why SVG for Fritzing?

SVG:

- Fast rendering
- Scaling with no degradation
- Real world units
- Our users already use SVG editing tools
- XML manipulation



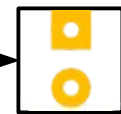
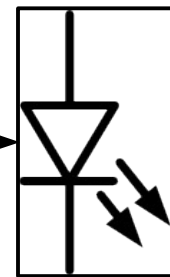
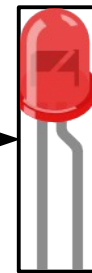
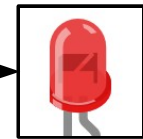
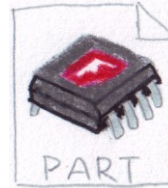
# Parts and Sketches

**DEMO**



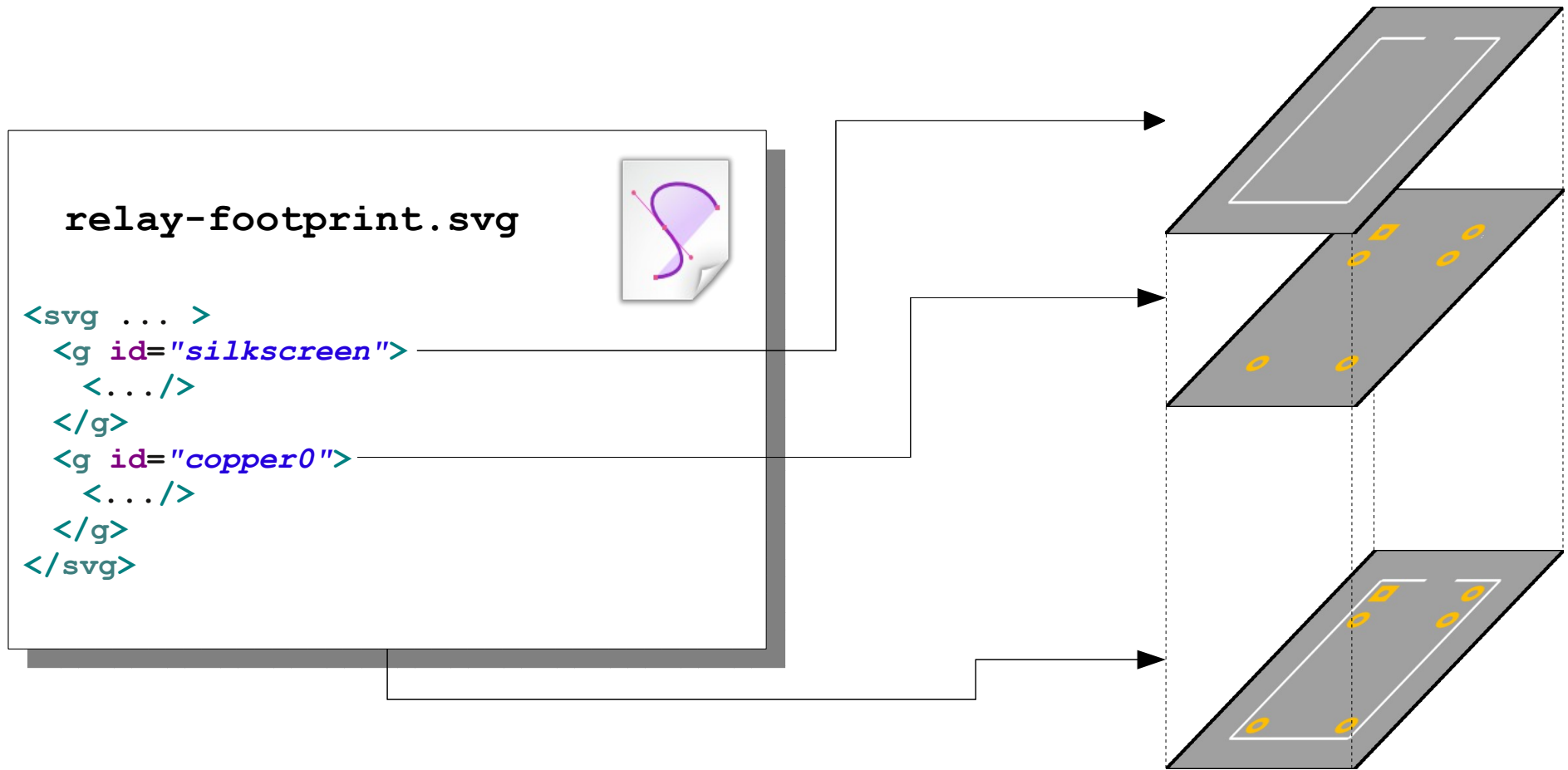
# SVG/Part Relation: Views

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    <breadboardView  
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    <schematicView  
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  </views>  
  <connectors>  
    <.../>  
  </connectors>  
</module>
```





# SVG/Sketch Relation: Layers





# Parts Problems

- We can't make all the parts users will need
- Make it easy for the users to create new parts



# Solution: Parts Editor

- Create art with familiar tools (inkscape & illustrator)
- Parts editor handles xml markup  
so users don't have to



# Solution: Parts Editor

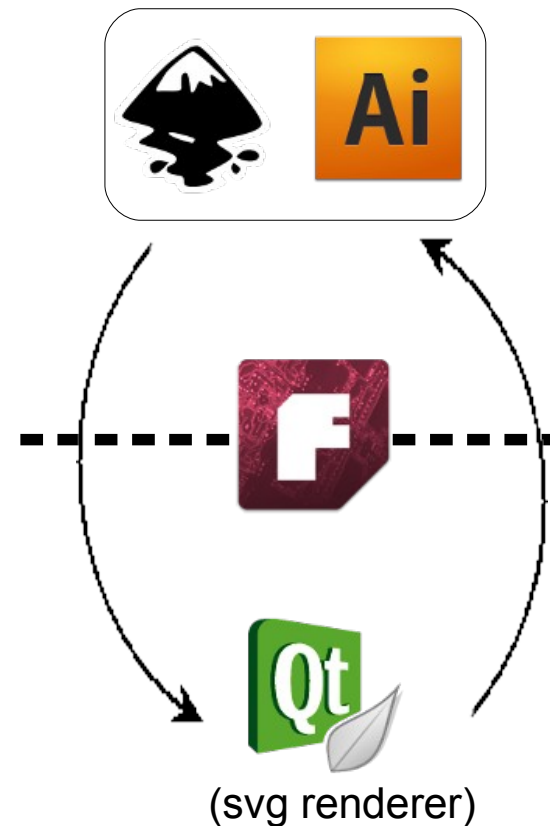
- Create art with familiar tools (inkscape & illustrator)
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# DEMO



# Solution: Parts Editor

- Create art with familiar tools (inkscape & illustrator)
- Parts editor handles xml markup so users don't have to







# Parts Editor

## Complications:

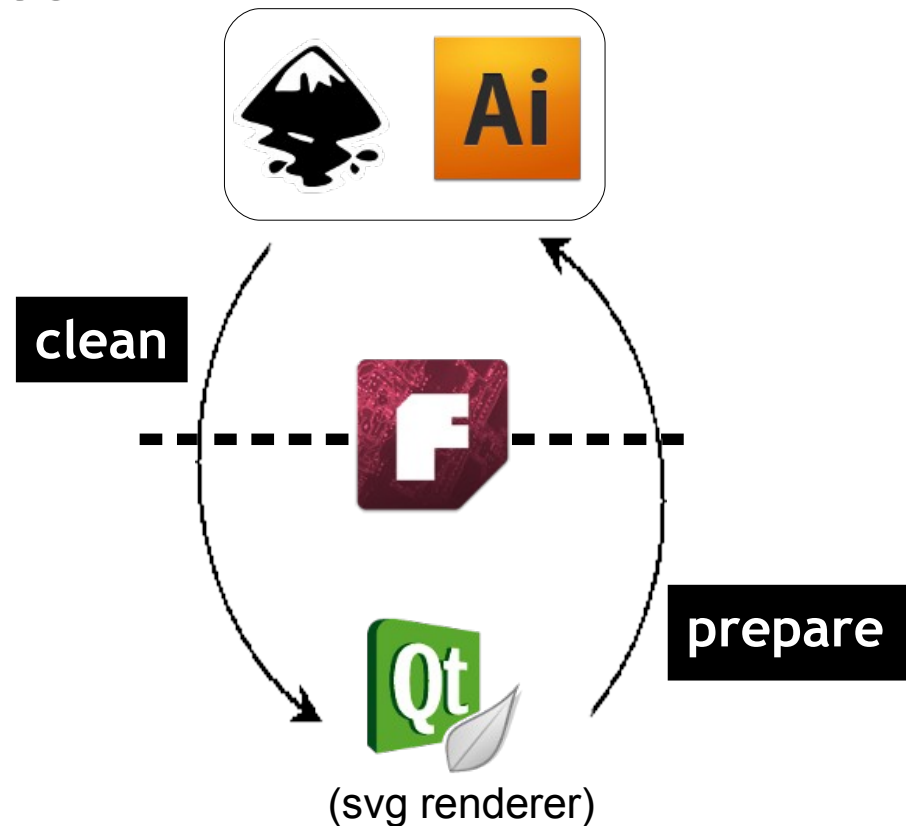
- illustrator idiosyncrasies
- inkscape idiosyncrasies
- Qt idiosyncrasies



# Parts Editor

Complications:

- illustrator idiosyncrasies
- inkscape idiosyncrasies
- Qt idiosyncrasies





# Export

- svg
- png
- jpg
- ps
- pdf
- **Gerber**



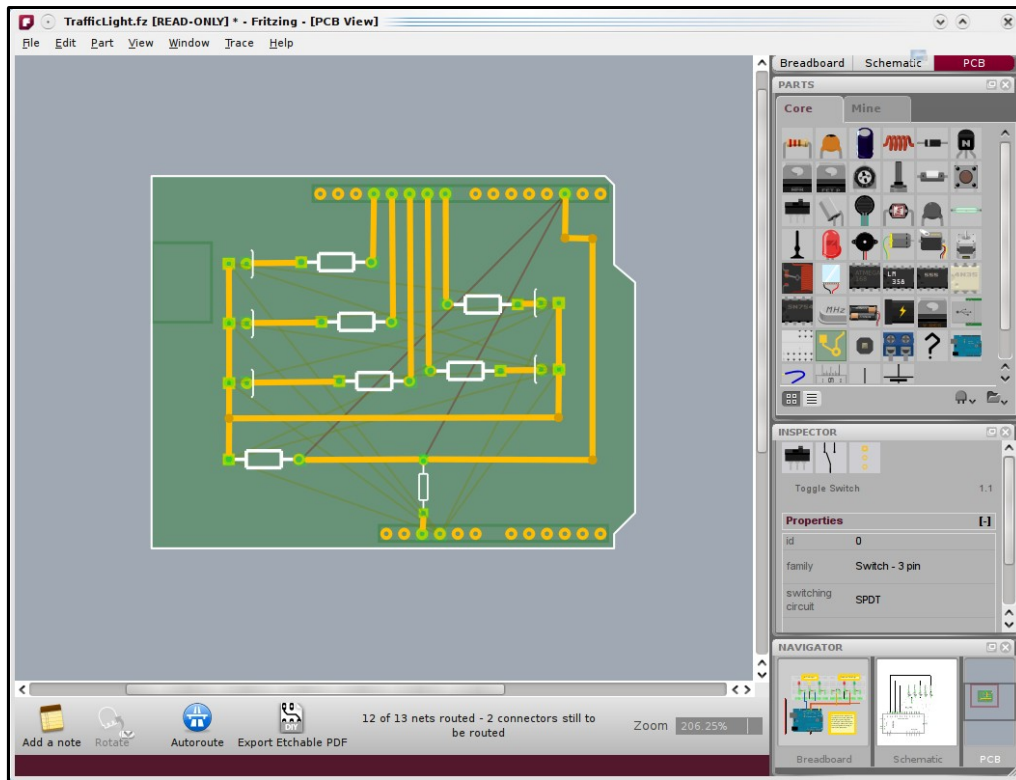
# Exporting to Gerber

## Steps:

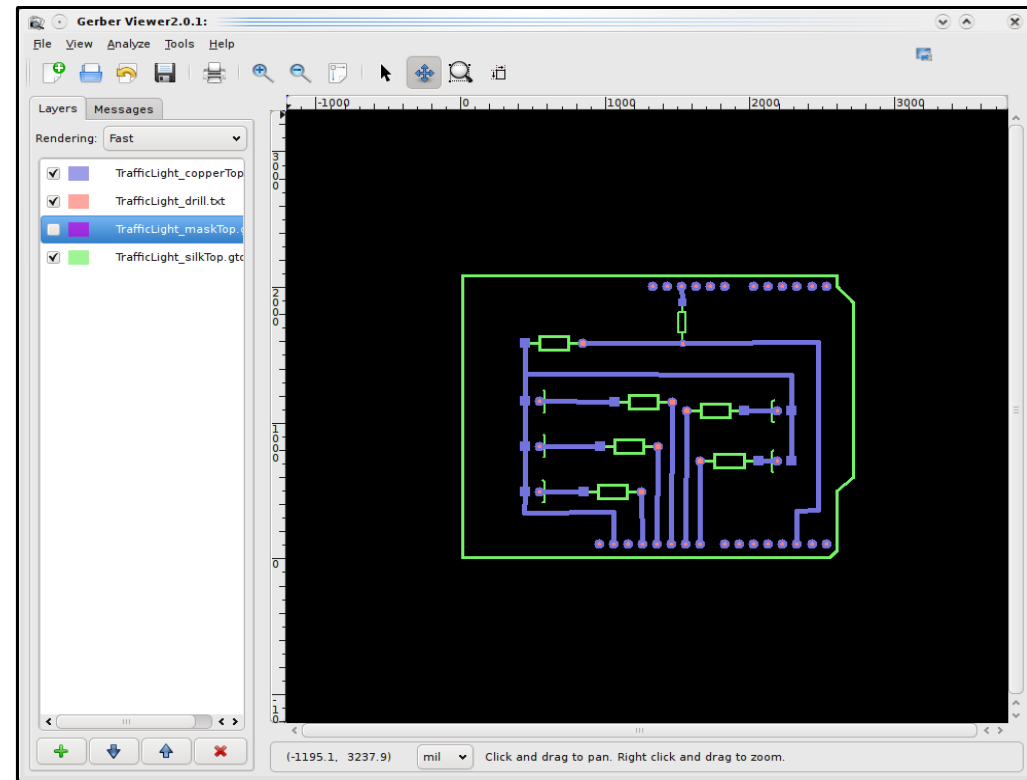
- Normalize elements
- Translation to absolute coordinates
- Convert wires to line elements
  
- Change `strokes` and `fill` attributes
- Hide unused layers
- Gerber “walkthrough”



# Exporting to Gerber



Fritzing



Gerber Viewer



# CONCLUSION

Love:

- Fast rendering
- Smooth scaling
- Real world units
- Programmatic manipulation of images

Hate:

- No standard standard (validation)
- No standard toolkit (c++)



THANKS!



[www.fritzing.org](http://www.fritzing.org)  
[code.google.com/p/fritzing](https://code.google.com/p/fritzing)



THANKS!

Questions?

[www.fritzing.org](http://www.fritzing.org)  
[code.google.com/p/fritzing](https://code.google.com/p/fritzing)





THANKS!

Bon appetit!

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