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"Technical Note 105/71" is the intellectual starting point for what would eventually become [ASML](#).

In the early 70s, optical expert Gijs Bouwhuis (who coincidentally rocked an awesome moustache) and system architect Herman van Heek shared an office at Philips Research in Eindhoven. They were puzzled by the manufacturing inefficiencies of their company's early semiconductors. With the help of mechatronics expert Ad Bouwer, the discussions resulted in Technical Note 105, which was circulated in Philips Research in May 1971. The team explored an entirely new kind of manufacturing system, using optical reduction lithography to shrink a pattern with optics and repeatedly print it on a silicon wafer. Bouwhuis came up with the genius solution of how to accurately align the pattern and the wafer, which enabled the whole thing.

"Keeping in mind the arguments mentioned above the optical group of Philips Research prefers a repeater over a 1:1 projection system, the crucial difference between the two systems is the possibility of adaption to future demand."

How right they were!

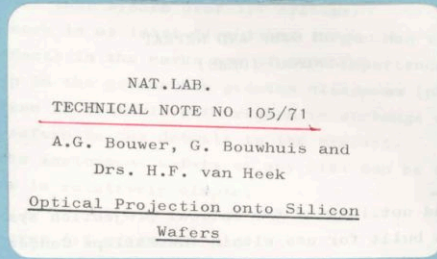
Fun fact #1: the team ballparked the total system costs at 250.000 guilders (around 850.000 Euro today). That covered 150.000 for the optics and 100.000 for the mechanics and electronics.

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