Customer Cases

- Robot off-line programming and simulation

Multilift

Kalevi Nurmi, CEO:

”Using simulation we saved about 3 MFIM during 1997-1999. This was the result of not to program robots on shop floor. We also could keep our promise to deliver the ordered goods in time to our customers”

COMPANY

A member of Partek Cargotec. Manufactures truck lifts for major truck manufacturers.

OBJECTIVE

Program the welding robots off-line, raise robot usability and also get faster NPI (New Product Introduction). Truck lifting devices.

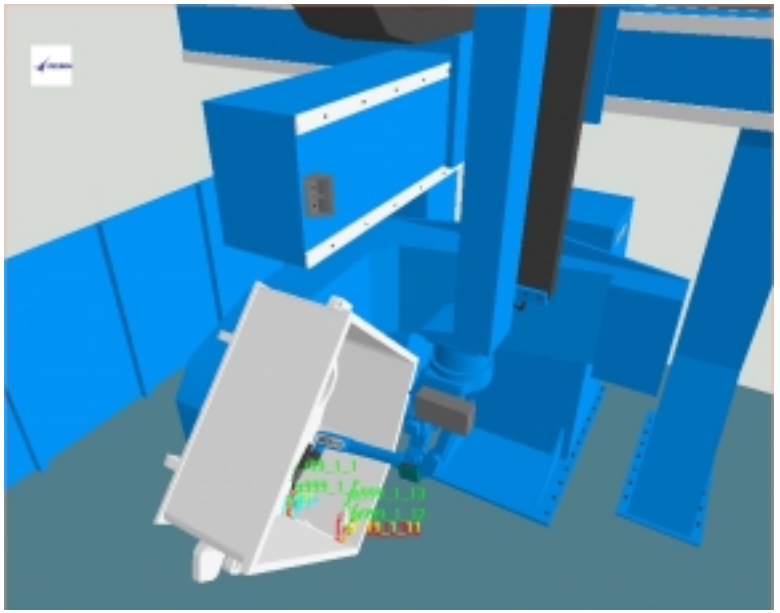
RESULT

Down- time dropped from average 40 hours per product to 3-4 hours. Direct savings due to off-line programming 2.8 MFIM (1997-1999).

Metso Drives

Timo Paarto, robot programmer:

"I started to program robot off-line after two weeks from training. Now I'm doing all the new programs off-line"



COMPANY

Metso Drives - former Santasalo Gears - is one of the world's leading manufacturers of mechanical power transmission equipment.

OBJECTIVE

Program the welding robots off-line, raise robot usability and also get faster NPI (New Product Introduction). Product: gear casing

RESULT

Down- time dropped from average two weeks per product to 1-2 days.

Metso/Dynapac

COMPANY

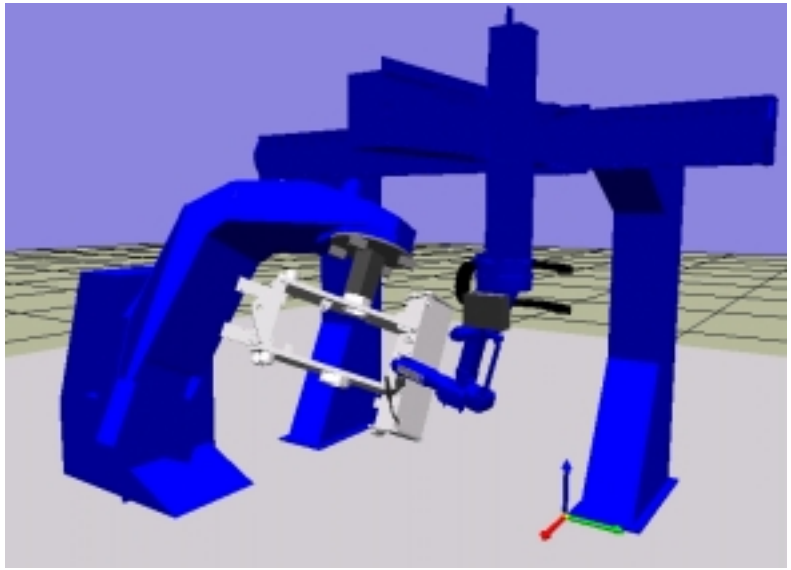
Manufactures pavers, planers, and rollers.

OBJECTIVE

Program the welding robots off-line, raise robot usability and also get faster NPI (New Product Introduction).

RESULT

Down- time dropped from average 80-100 hours per product to 8-10 hours.



TP Konepaja

COMPANY

A subcontractor for Heavy Metal industr. Welds large steel structures with large welds: single and multi pass.

OBJECTIVE

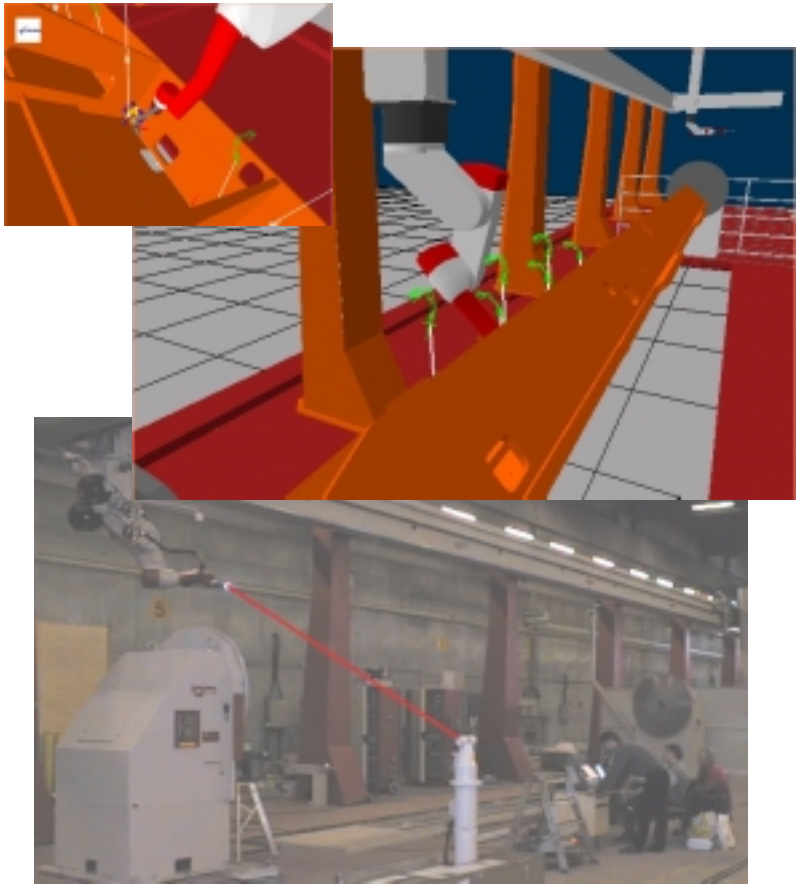
Fast ramp-up with different products of different customers.

SOLUTION

Flexible, off-line programmed robot cell for one-of-a kind production. Concurrent welding process planning together with the end user. Basis is a customer's 3D CAD design.

RESULT

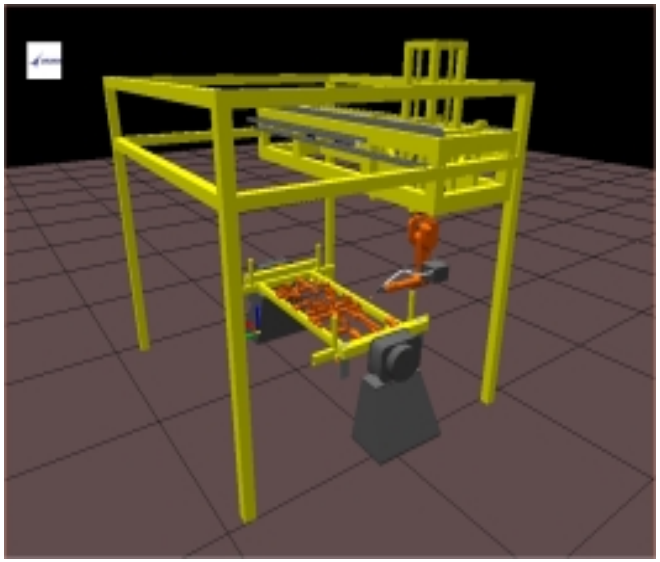
Off-line programming accuracy 2 mm, max deviation 4 mm. The robot cell is 100% off-line programmed.

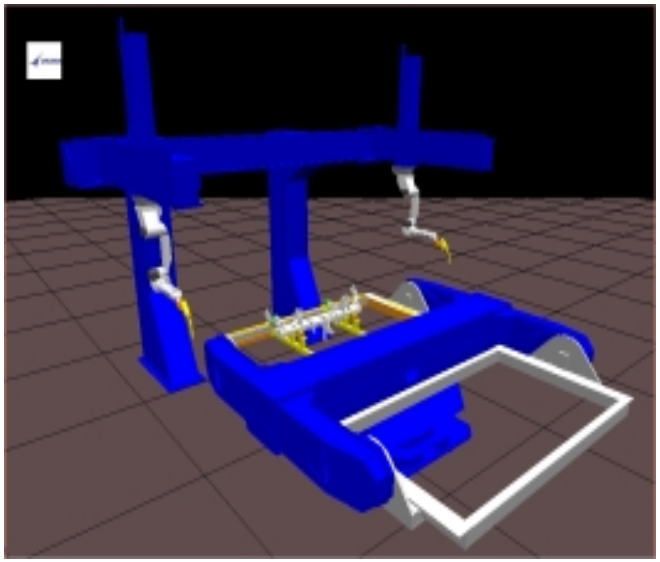


Picture: Calibrating the robot cell

35 m length, 5 m height, two robot arms / 11 DOF each, a single wire and twin wire welding, one and two axis turn tables.

Väderstadsverken (MW/HW)





COMPANY

Väderstadsverken, located in Väderstad, Sweden, manufactures tractor hauled farming equipment, such as cultivators, rollers and drills.

OBJECTIVE

Vädertadverken had year 2001 had three robot cells for several years. At this time the demand for production time in the existing cells, forced any on-line programming job to be made at over time or weekends, at extensive cost. This fact created a need for an alternative solution. It came to be off-line programming in IGRIP.

RESULT

All three robot cells, two ABB S3s and one Motoman were modeled in IGRIP and in collaboration with Robotsvetsskolan AB, welding programs for new products were made. Väderstad bought during the autumn Uarc and a new Motoman robot cell and hired a specially assigned worker for off-line programming tasks.

DELFOI

Norba

COMPANY

Norba, located in Blomstermåla, Sweden, is one of Euroupe's leading manufacturer of equipment for the handling of refuse and recycling materials.

OBJECTIVE

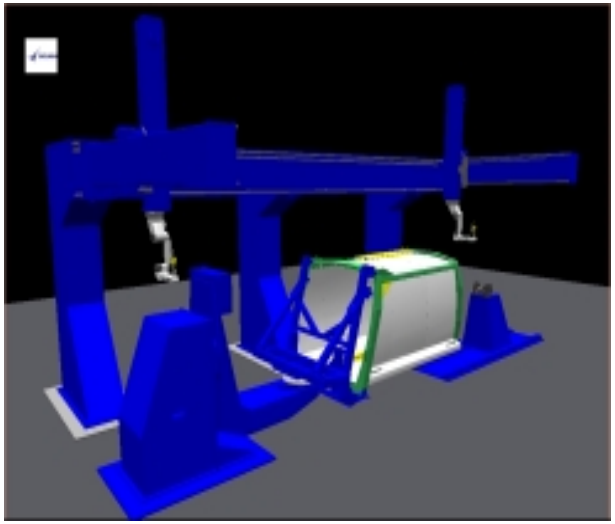
In the year 1996 Norba was about to invest in new robot equipment. During the planning of the project, they found out that the number of products variants were to large for an effective use of traditional robot on-line programming techniques. They needed a solution for decreasing programming time in their new robot cell, to increase utilization, and also to decrease the total amount of programming time. The answer was parametric off-line programming in UARC.

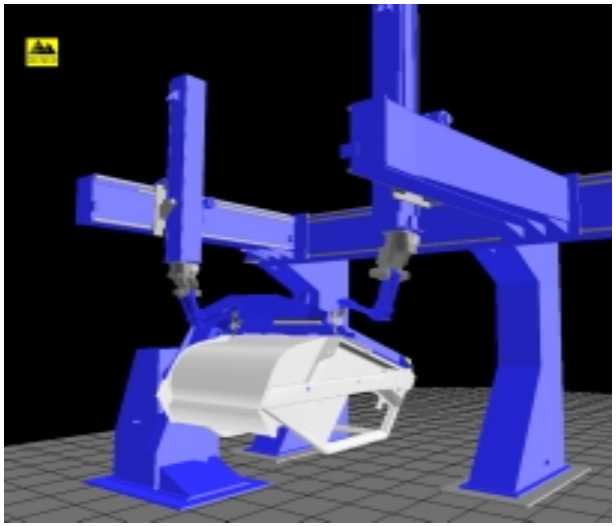
Norba

RESULT

Norbas twin Motoman cell was modeled in UARC, and two former welders are now using UARC as an everyday working tool for robot programming tasks, working in shift. The introduction time for a new product decreased with 85% , from 40 hours to 6 hours, by the use of UARC.

In the fall of 2001 Norba bought a new almost identical robotcell from Motoman, to further increase product output. This robot cell model was also delivered by Delfoi, to be used in the same matter as the old one.





Zetterberg

COMPANY

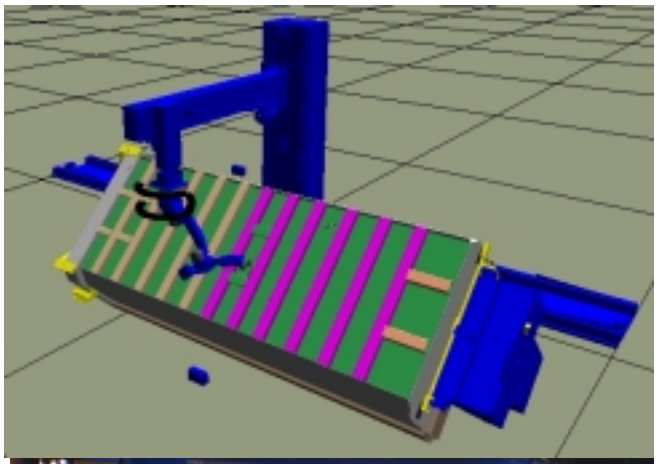
A member of Partek Cargotec. Manufactures truck lifts for major truck manufacturers.

OBJECTIVE

Program the welding robos off-line, raise robot usability and also get faster NPI (New Product Introduction). Truck body structure. The welded parts are all one-of-a kind.

RESULT

Welding time 2 hours. On-line programming for similar part would take appr. 1,5 weeks. Off-line programming took 0,5 hours ! The programs are downloaded to the robot controller – no test runs – no production stoppages..



Talgo Transtech

COMPANY

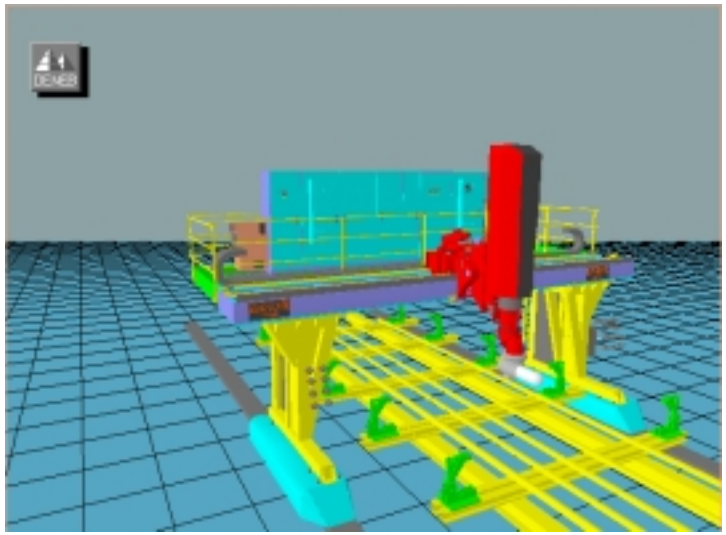
Talgo-Transtech Oy is one of Europe's leading manufacturers and suppliers of railway vehicles and a significant mechanical engineering structure supplier.

OBJECTIVE

Program the milling robot off-line, and get faster Ramp-up, NPI (New Product Introduction). Product: steel structures

RESULT

The milling robot is programmed 100% off-line.



References

(hitsaussovellukset kursorilla, suluissa robottimerkki

Sulzer Pumps (A.Ahlstrom Corp.) (Fanuc)
ABB Atom (ABB)
ABB Flexible Automation (ABB)
ABB Welding Systems (ABB)
ABB Stal (Motoman)
Boeing Corp. (Tricept)
BT Truckar (Motomaan)
Caran
Dynapac (Motoman)
Finnscrew (ABB & Motoman)
Gettinge (Motoman)
Hägglunds (ABB)
Hiab (Motoman)
IVF
Lear Corp. (Tricept & ABB)
Lillbacka (Motoman)
Multilift, Partek Cargotec (ABB)
Neos Robotics (Tricept)
Norba (Motoman)
Normet (Motoman)
Omninova (Motoman)
Plastman (Blastmen)
Raufoss Automotive (ABB)
RTS Finland (ABB)
Sandvik Tamrock (Motoman)
Saab Military Aircraft (ABB)
Teräselementti (Motoman)
TP Konepaja (IGM)
Vaahto Group (Motoman)
Valmet Automotive (Fanuc, ABB)
Valmet Paper Machinery (Motoman)
Volvo Aero (ABB)
Volvo Cars (KUKA)
Volvo Truck (ABB)
VTT
Helsinki University of Technolgy
Lund University
Tampere University of Technology
Lappeenranta University of Technology
Technical University of Trollhättan/Uddevalla
TEC--Växjö
Zetterberg (Partek) (Motoman)