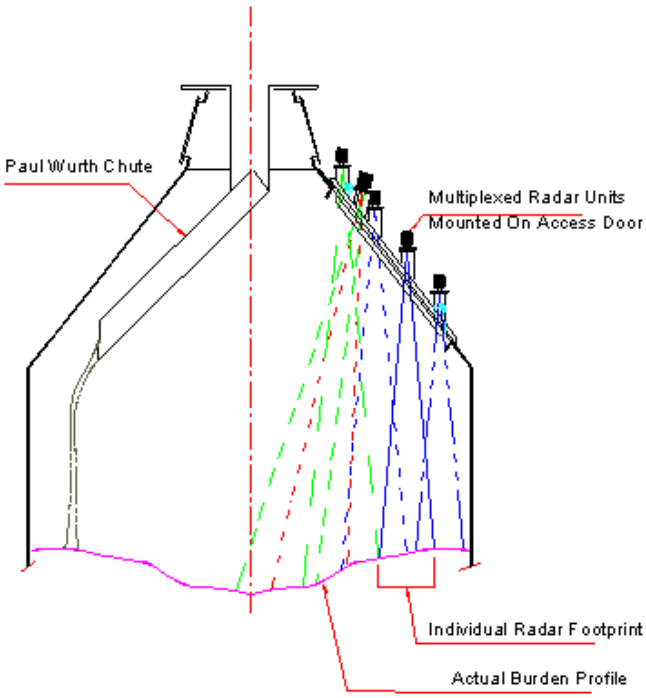
Burden Profile Meter 'Topscan'

Corus Consulting Limited, Teesside Technology Centre, P.O. Box 11, Grangetown, Middlesbrough, Teesside TS6 6UB U.K. Telephone: +44 (0)1642 467144 Fax: +44 (0)1642 460321
E-mail: colin.notman@corusgroup.com

A knowledge of the changing surface profile of burden material in a blast furnace is a valuable aid in improving the stability and control of furnace operation.

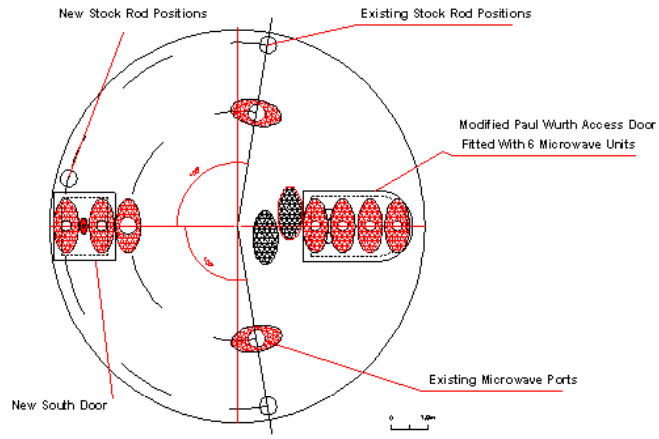
Commercially available devices are available to measure the radial profile using a probe with microwave range meter driven into the furnace above the burden, however the engineering costs are prohibitive.

By utilising a Paul Wurth chute access door and modifying it to accept a series of strategically positioned microwave sensors, it is possible to measure the radial profile on-line without any moving components and at a considerable cost reduction to conventional methods.



The main benefits to be gained from the use of "Topscan" are:-

- improved stability and control of the blast furnace operations
- continuous measurement of the burden top profile
- no moving parts - very low operating cost
- low capital cost compared with alternative devices
- add-on units can be installed to provide more accurate profile and '3-D' image



The microwave array, termed 'Topscan', has several advantages over probe based devices, namely, it is considerably cheaper, there are no moving parts and continuous measurement of profile data is possible during material distribution.

The hardware has been providing useful information on the burden surface profile using developed data acquisition and presentation software to display material layers, average burden level and ore/coke ratio along a radius. Additionally, a pseudo '3-D' picture of the whole burden surface is displayed.

Additional microwave devices can be added at strategic positions to give a more accurate top profile and '3-D' image.