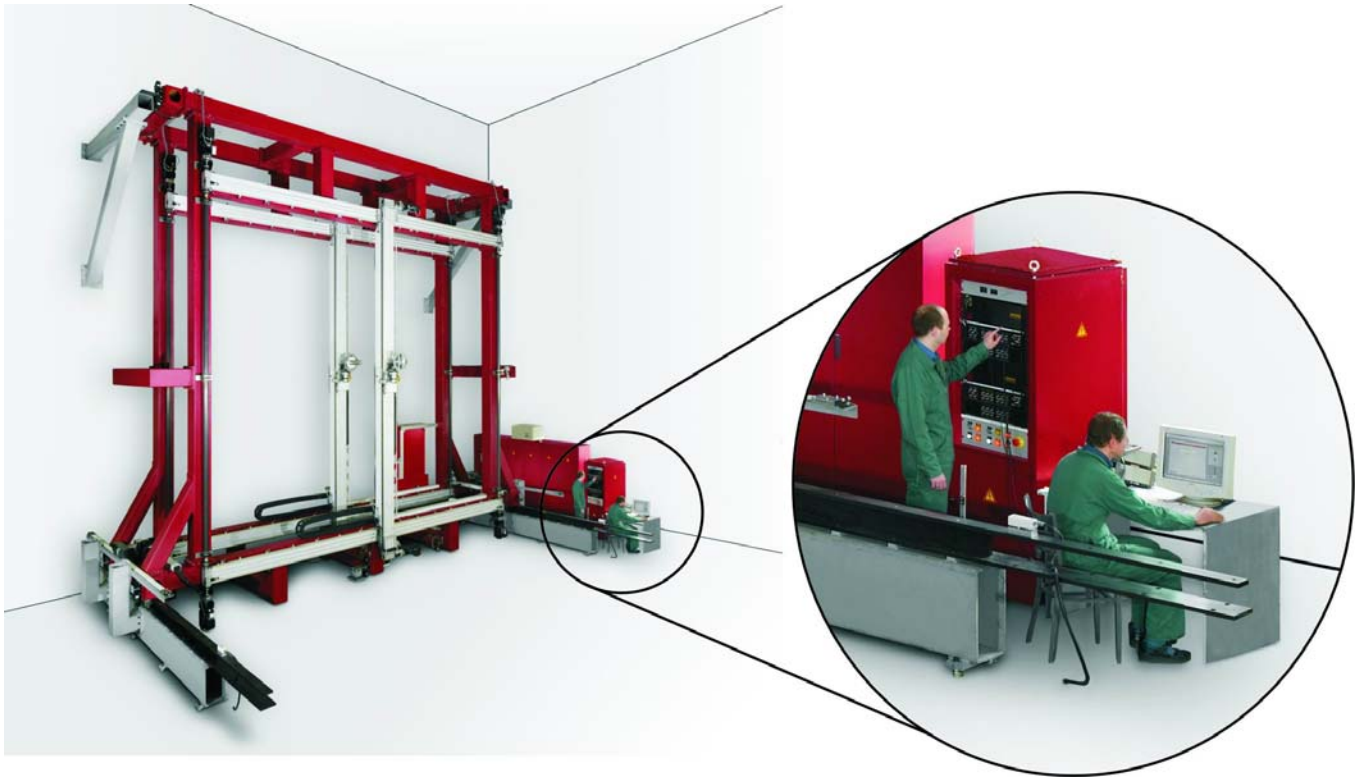
Target System

DUAL TARGET MOTION SYSTEM



Description

The DTMS has two target platforms which move linearly in both X- direction (horizontal) and Y-direction (vertical). Synchronous to the linear movement the Target Platform has to rotate the target horns to keep them pointing back to the axis intersection of a three-axis FMS. These co-ordinated movements are accurate at low as well as high dynamic movements.

In order to accomplish these movements the DTMS has a total of six motors for the linear and two motors for the rotational movement of each target. The x and y movement use four motors which are linked together either by a torsion beam (top-bottom) or a belt (left-right) on which the vertical slide is mounted. In the vertical direction, two motors (top-bottom) drive the belt on which the target platform is sliding. The rotation in azimuth and elevation direction of the target platform is done by two Harmonic Drives.

A four-axis ACUTROL® is used to control the four axes of each Target Frame making a total of eight axes of control.

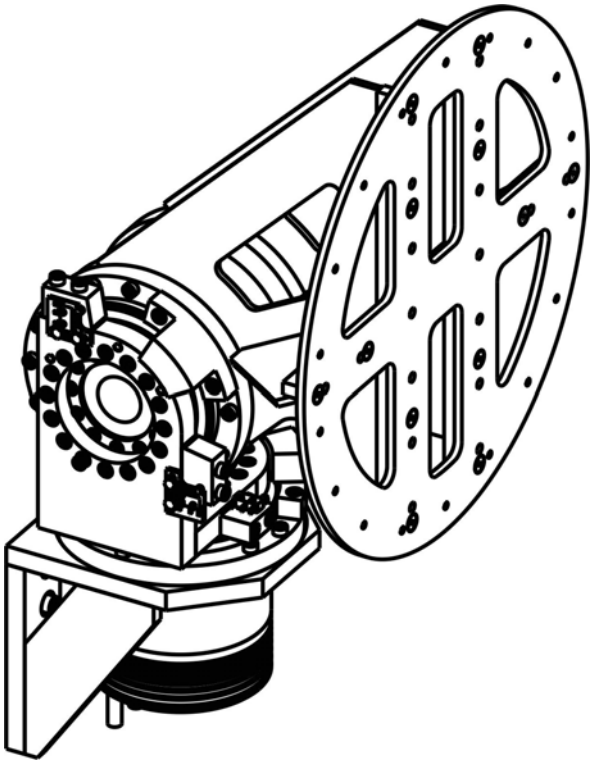
Pointing

As the customer commands the Target Platform in X and Y, a real time transformation into linear and rotational motion has to be done. This transformation is done in a real time computer running LabVIEW RealTime. The commanding can be done either via SCRAMNet in Track Mode using position, rate and acceleration or with an analog signal, representing Position and Rate demand. Both the SCRAMNet data as well as the analog demands are inputted to a real time computer, where a full state vector is generated then converted in to linear and rotational vectors and finally sent to each ACUTROL® via the SCRAMNet link.

A Graphical User Interface computer provides the operator the ability to initialise the system, control, start and stop simulations and shut the system down.

Performance Parameters

Payload (Each Platform)	25 kg	
Size	500mm diameter x 500mm high	
CG	Center of cube	
Travel, usable:	Horizontal, X-direction	+/- 3.5m
	Vertical, Y-direction	+/- 3m
Position accuracy:	+/- 1.5 mm	
Position repeatability	+/- 0.25 mm	
Pointing accuracy:	0.1 deg in azimuth and elevation	
Velocity, maximum:	2.4 m/s for x an y direction	
Velocity, minimal:	0.05 m/s in x and y direction	
Acceleration, peak:	26.3 m/s^2	



2-Axis Target Platform

Options

- Z Axis Rails for different ranges
- Payload Configurations
- VMIC Real Time Interface
- Custom X-Y Dimensions
- Curved Tracks
- Improved Rates
- Custom acceleration

For further information, contact:
ACUTRONIC USA Inc.
640 Alpha Drive, Pittsburgh, PA 15238
USA
Phone: 412 963 9400 Fax: 412 963 0816
Email: marketing@acutronic.com

Internet: www.acutronic.com

ACUTRONIC Switzerland Ltd.
Techcenterstrasse 2, 8608 Bubikon
Switzerland
Phone: +41 55 253 23 23 Fax : +41 55 253 23 33
Email : marketing@acutronic.ch