PARD Workshop

Workshop Title:	Computer Simulation of Metal Forming and Joining (Duration: 1 day)
Who should attend?	Stamping Engineers, Assembly Engineers, Production Planners, Technical Managers, Stamping and Body Assembly Operation Engineers. Anybody wanting to computer simulate forming or joining manufacturing processes, or with an interest in the application of these CAE tools, for example, the feasibility of crash or fatigue modelling.
Prior Knowledge required?	Knowledge of metal stamping and joining processes; experience of CAE tools and methods would be advantageous.
Who will deliver the workshop?	Forming content: Sumit Hazra, University of Warwick Joining content: Iain Masters, University of Warwick

Description of Course:

The short course draws examples from the automotive industry but has application in other sectors, for example, marine and aerospace. It is aimed at professional and CAE engineers and gives a detailed insight into new methods developed for computer simulation of stamping of components in steel and aluminium and the tools and methods that can be used to investigate structures assembled using Resistance Spot Welding (RSW) and Self-Pierce Riveting (SPR). The main topics covered are:

- The sensitivity of forming simulation to input parameters
- Prediction of cosmetic surface defects in pressed sheet metal parts
- Development of local models for RSW and SPR joining
- Global modelling of assemblies
- Linking forming and joining simulation – a look ahead

Objective:

By the end of the course attendees will have knowledge of new techniques that can be used to improve the robustness, accuracy and capability of forming and joining simulation for products within their businesses. They will also have an insight into future CAE approaches that seek to model combined forming and joining manufacturing processes.

Location of Workshop:	University of Warwick or Partner Company
Format:	Classroom / lecture theatre based presentation

Timetable:

Morning		Afternoon	
08:30	Registration	12:30	Lunch
08:45	Introduction	13:30	SPR local modelling
09:00	Forming parameter sensitivity	14:00	Assembly modelling (i)
10:15	Refreshments	14:45	Refreshments
10:30	Cosmetic surface defect prediction	15:00	Assembly modelling (ii)
11:45	Refreshments	15:30	Forming to crash / fatigue
12:00	RSW local modelling	16:00	Close