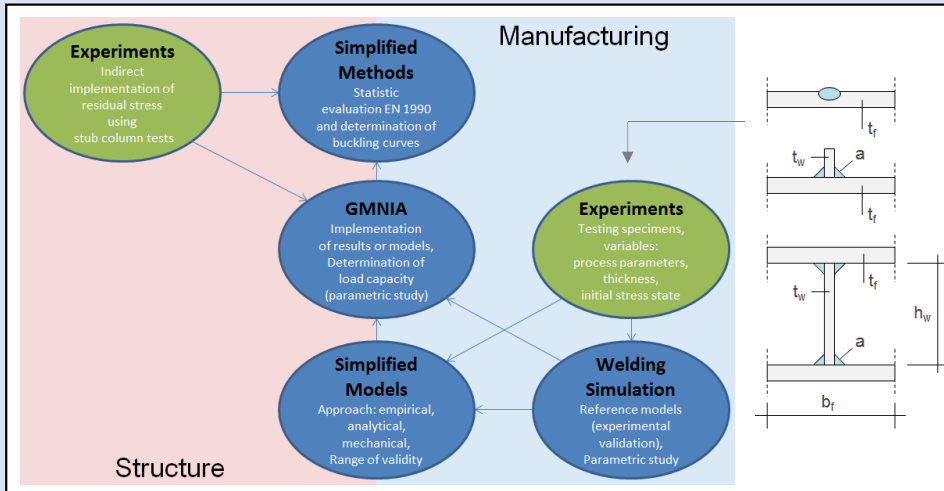


## Enhancement of Load Capacity of Welded High-Strength I-Shape Sections Using Improved Design Models for the Consideration of Residual Stress



### Initial Position:

- Use of highly simplified residual stress models in civil engineering
- Neglect of manufacturing and material dependent influencing factors
- Conservative dimensioning of welded girders, especially for increasingly used high strength steels in steel construction

### FOSTA Research Project (P 1035):

- Development of different models for the prediction of residual stress
- Evaluation of relevant parameters (effect of heat input, flexibility, initial stress state and phase transformation)
- Extensive experimental and numerical validation at small and full scale specimens (S355J2+N, S690QL)
- Implementation into capacity analysis, compilation of user guideline

### Involved Industry Partners



### Research Centers



Total amount: 410.850,00 €  
 Duration: 01.04.2014 – 31.03.2016  
 FOSTA-Project status: in progress

### Results:

- Reliable, precise and practical design methods for the dimensioning of welded profiles from normal and high strength steel
- Contribution to the revision of simplified design methods from EN 1993-1-1