

## BAESYSTEMS SPF/DB Road Map

**Current                      Plans 5 years                      Future 15 years                      Vision 25years                      Time**

**Market / Drivers**

Reduced cost and weight & Improved performance	Substructure developments capable of withstanding very high 'g' forces and high and cryogenic temperature	Super light rigid high performing airframe	
An established understanding of the process within Engineering	Multi role combat aircraft, vertical take off piloted and UAVs and transport	Very high altitude single stage sub orbital /space vehicle	
Customer defensive requirements	blank	blank	

**'purpose'**

**Products / Services / Performance / Processes**

Single sheet SPF-Al structure /detail from 100mm <sup>2</sup> up to 2m <sup>2</sup> up to 300% ε	AL and Ti Doors, speed brakes, panels Formed doubler reinforcements	Highly loaded structures	blank
Al bulk heads, frames, spars	N/c control of stop off printing		
Multi sheet Ti SPF/DB details and components 1 to 4 sheet up to 2m <sup>2</sup>	Low cost / ceramic tooling design for life guarantee	blank	blank
HIP bonding of sheet, plate & forging			
Covers, keels, spars, flaperons, channels foreplanes doors, heat exchangers,	Fully automated gas management system	Absolute atmosphere control- vacuum/space environment	
Structures- fluted, warren girder, accordion, x-core, cellular		Elimination of chemical milling/Protective coating of SPF structures	

**'delivery'**

**Technology / Research / Knowledge**

Cellular structure development and enhancement	Rapid forming	Explosive Bonding/SPF	DB aluminium
Low temp SPF Ti	Fibre reinforcement of SPF/DB parts		
Non ht high strength Al alloys		SPF particulate materials	
SPF Modelling prediction, material SPF characterisation			

**'research'**

G Drive Future Projects/Team Member/George Strickland/IoM3/Generic Road Map