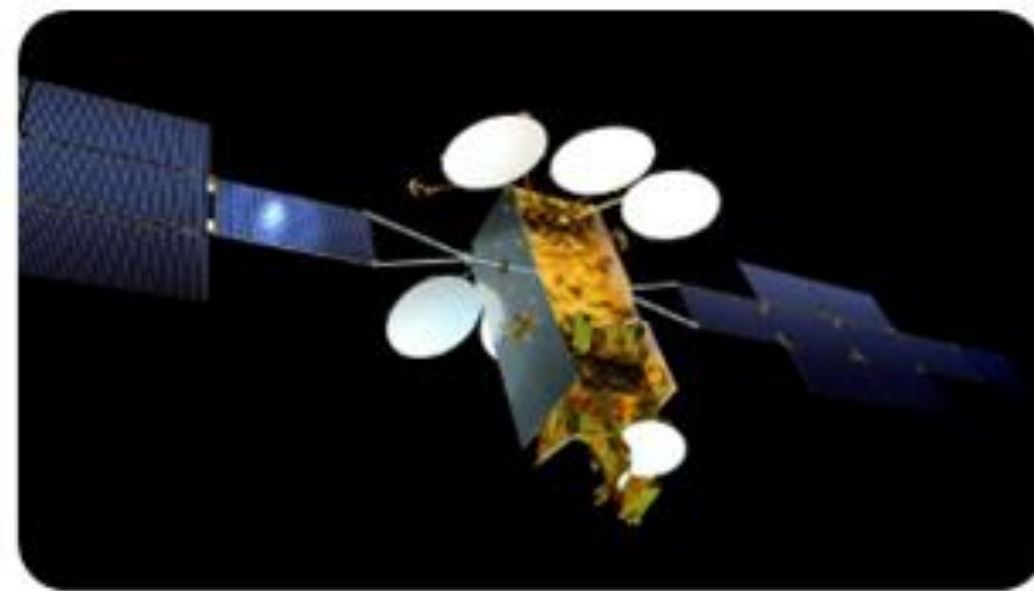
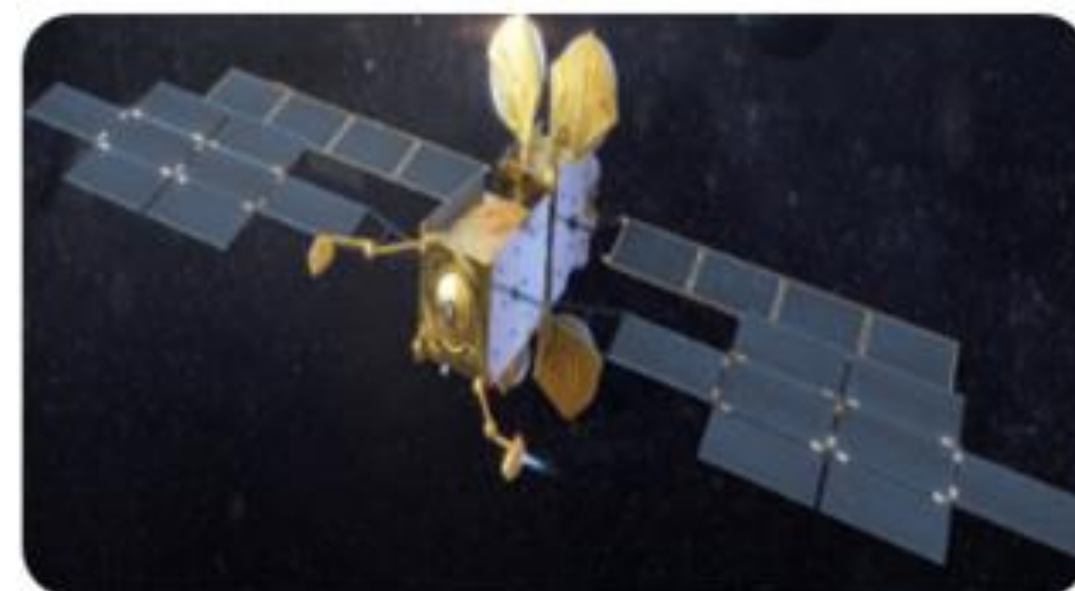


Introduction

This project is an answer to European call for “ Innovative solutions for very high-power systems” in line with recent mission trends in Space market



Very High Throughput Satellites



In Orbit Servicing With SEP

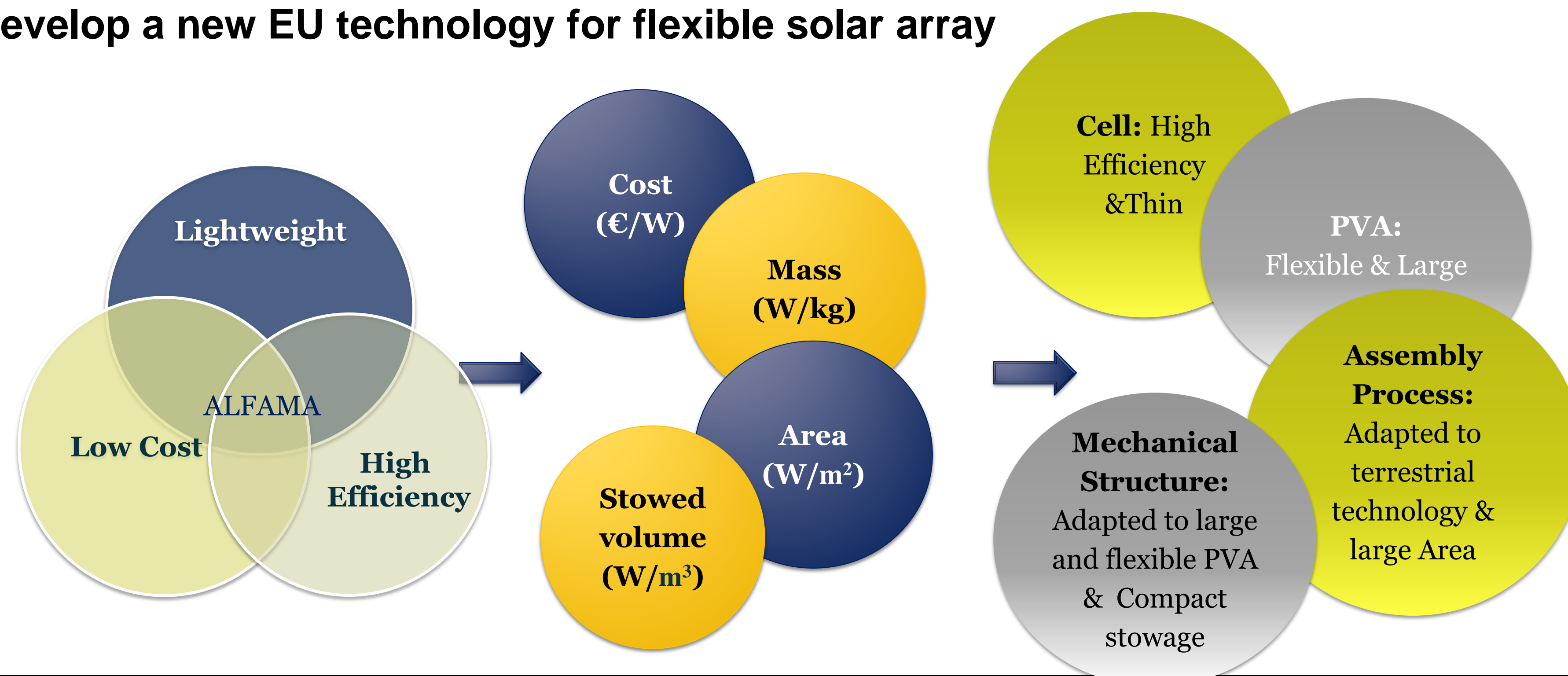


Constellations

The aim is to develop a low cost flexible solar array with scalable modular mechanical architecture

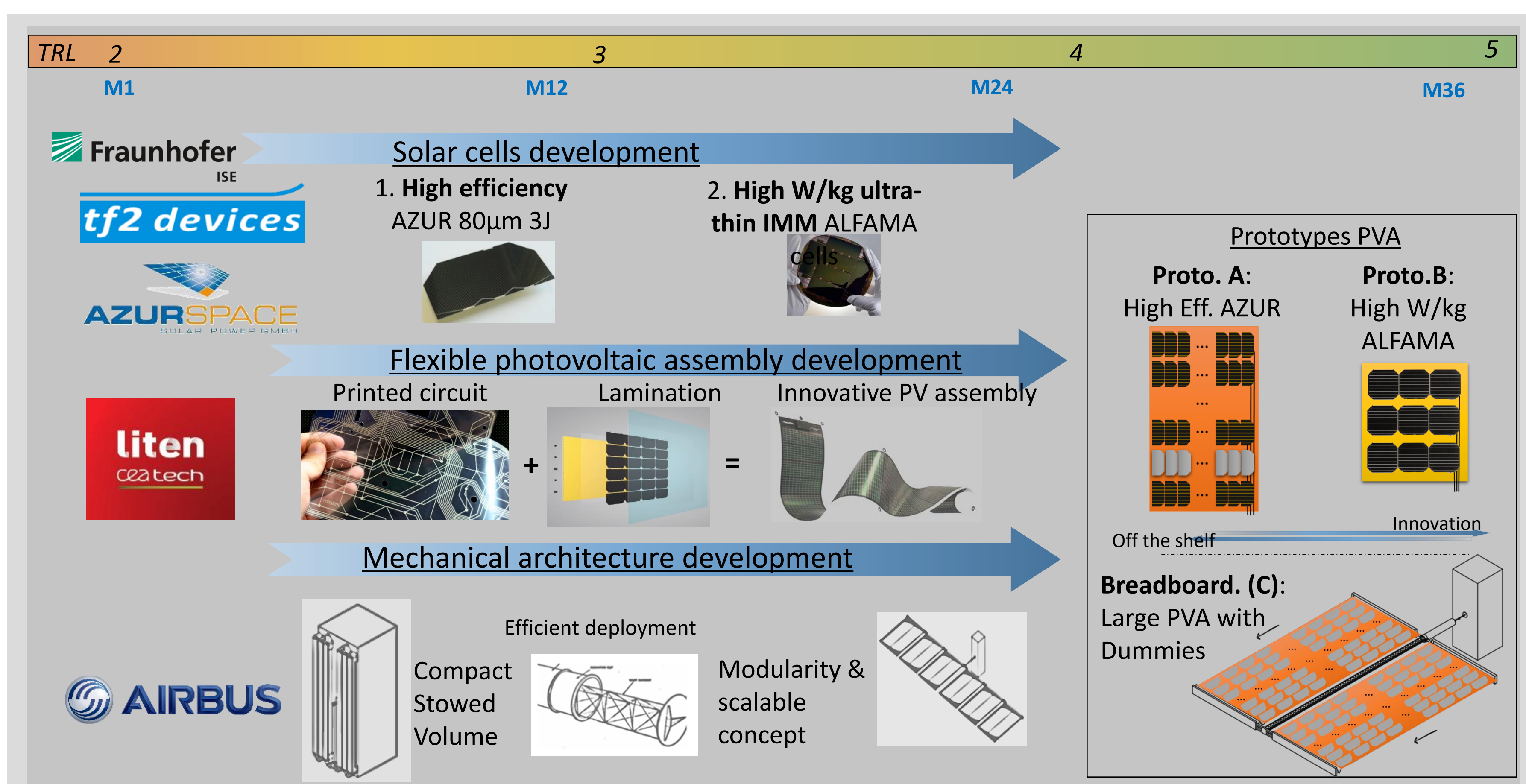
Objectives

Develop a new EU technology for flexible solar array



Methods

3 activities are managed in parallel

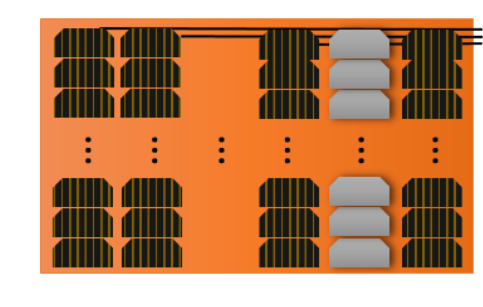
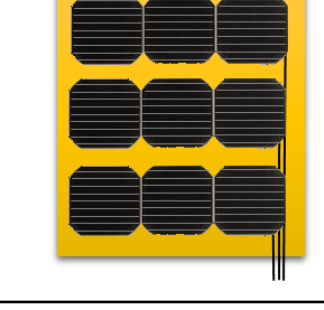
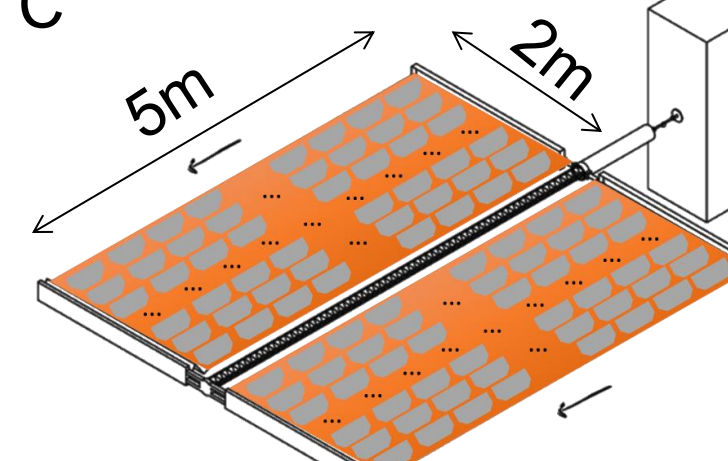


Expected Results

European ELO IMM 3J cells development, manufacturing and test

2 PVA prototypes proof of concept will be manufactured and tested

1 deployment structure for large flexible SA

ALFAMA Prototypes	Solar cells	Challenge addressed	Main characteristics
Proto A 	AZUR III-V 80µm 3J	High efficiency (W/m ²) flexible PVA	• Combination of 80µm AZUR cells & dummies on a flexible laminated PVA
Proto B 	ALFAMA 3J Lift-off IMM	High power density (W/kg) flexible PVA	• ALFAMA ultra-thin IMM cells on a flexible laminated PVA
Proto C 	Dummies and/or III-V	Automated deployment of large flexible PVA	• Cell mechanical dummies, electrically inactive • Large size laminated flexible PVA: 6 to 10m ² • Efficient and compact mechanical architecture and deployment system

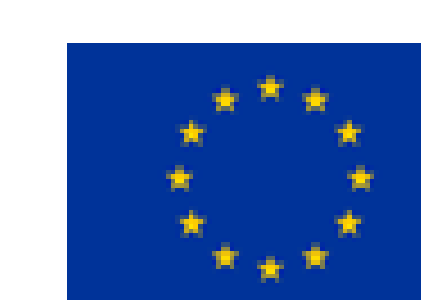
Conclusion

ALFAMA project - Advanced Lightweight and Flexible Array with Mechanical Architecture- will enable to develop in Europe the technology of flexible solar array in order to face the emerging needs for low cost and large solar arrays thanks 4 main development streams:

- **Cost reduction**
with its innovative manufacturing process
- **High power per mass ratio,**
high efficient ultra-thin solar cells & PVA
- **Volume gain,**
flexible PVA & compact stowed system
- **Modular mechanical architecture adapted to large PVA (>70kW capability)**
addresses all missions

Consortium

	NL	Mechanical architecture, mechanism. Coordinator
	FR	Specification and System analysis
	D	Expertise on space PVA
	FR	Module technology development
	NL	Cell thinning and ELO technology
	D	1st cell provider and thin cell technology production
	D	Thin cell development
	FR	Dissemination



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