Cavity preparation	System		Topic	Needed R&D	Working parties
	Optical inspection	mandatory	QC	mass production issues	
	Dimensional inspection	mandatory		mass production issues	
	Frequency tuning	mandatory	QC	mass production issues	
	Cleanroom	mandatory	clean handling and assembly	QC issues	
				Procedures for personal	
				Adaption of the cleanroom to the product e.g. logistics	
				Cleanroom-compatible tooling	
				Tooling with semi-automation options	
	Ionized N2 cleaning	mandatory	component cleaning	mass production issues	
				automation desirable	
	Ultrasound	mandatory	component cleaning	mass production issues	
	Resistivity rinse	mandatory	component cleaning	mass production issues	
	Ultra-pure water system	mandatory	component cleaning	large-scale, redundancy	
				hot water rinsing	
	HPR	mandatory	final cavity cleaning	redesign after all the lessons learned	
				reliable operation, design for high throughput, redundancy, maintainability	
				online monitoring (TOC, Particles, Resistivity, sample port)	
				optimum parameters	
				nozzle parameters	
				FE sample scans	
	Etching	mandatory	min. outside etch	mass production issues	
			evt. Inside etch		
	EP	mandatory	high gradient	optimum parameters (acid mix, electrode shape)	
			reliable operation	Acid QC e.g. online HF monitoring	
				temperature stabilization (heat exchanger)	
				voltage/current/potentiometric control?	
				EP samples: FE scans, roughness measurement	
	In-situ baking	mandatory	high gradient	Magnetic or electric field effect	
				grain boundary effect	
				equator weld problem	
				optimum conditions	
	furnace treatments	mandatory	800 C: stress, hydrogen		
		option	1400 C: post-purification		
	Dry-ice cleaning	option	higher efficiency, horizontal cleaning	Demonstration of horizontal cleaning	
				Multi-cell demonstration	
	Barrel polishing	option	less material removal	Multi-cell demonstration	
	Megasonic	option	higher cleaning efficiency	try on cavities	