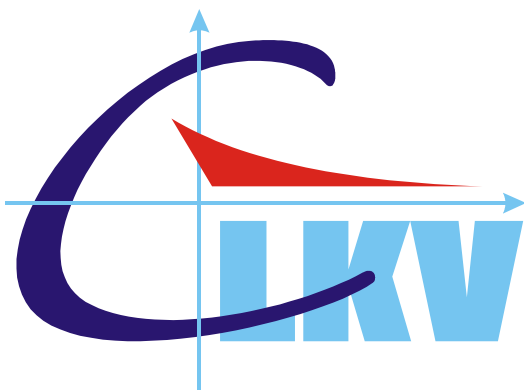




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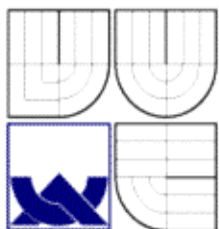
Aerospace Research Centre and its Philosophy



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<http://lu.fme.vutbr.cz>



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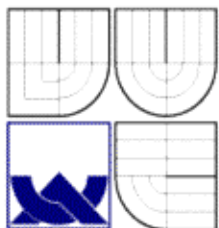
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2000-2004

2005-2009

The goal of „Research centres" is to centralize research capacity at research activities, which will be guarantee of the effective transfer of knowledge from research phase to using subjects.

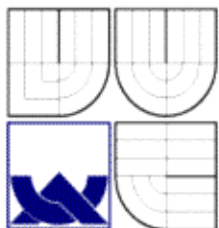
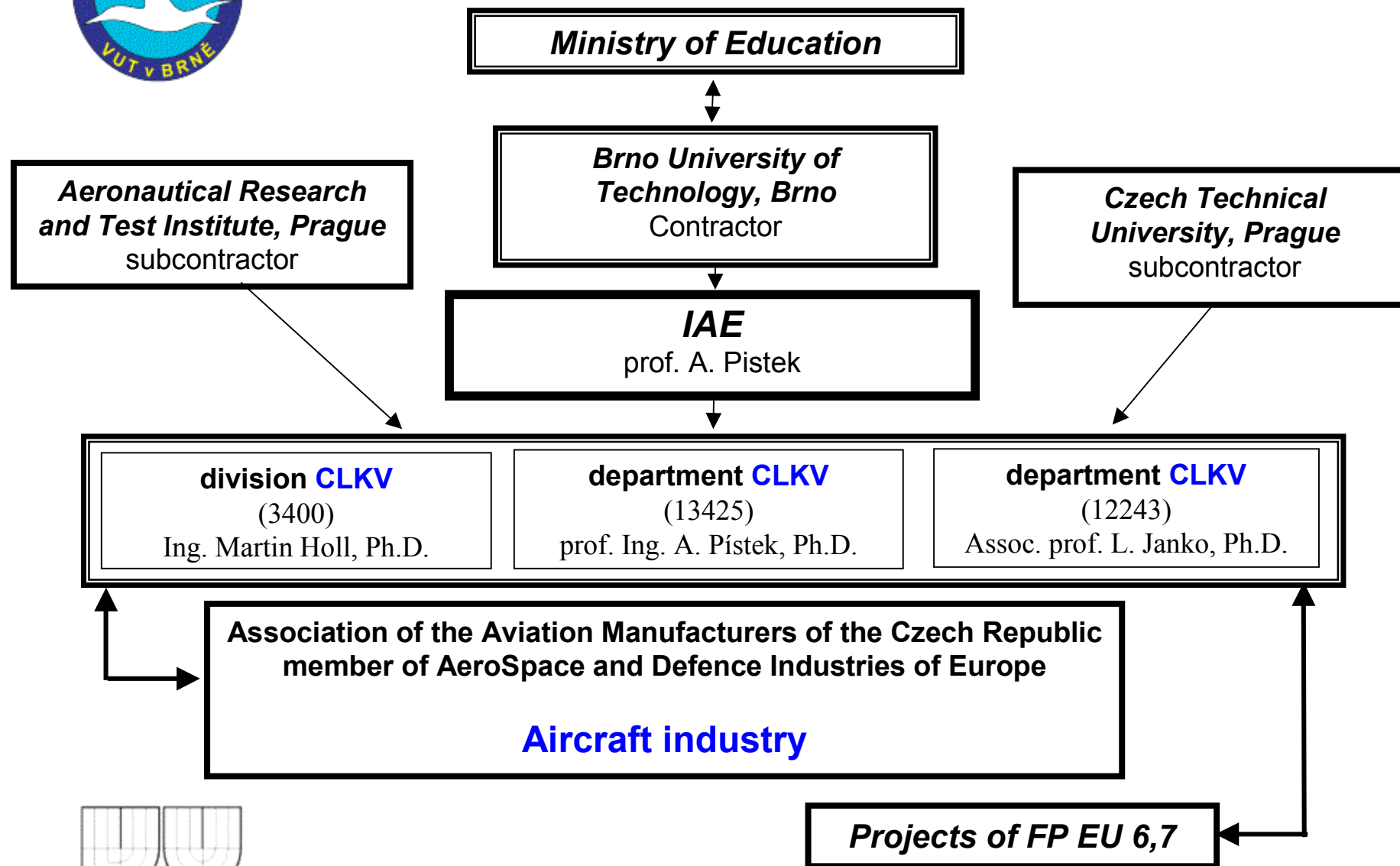
- advancement of research and development
- realization at realistic items
- large connection with producers
- integration to Europe research



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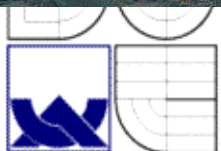
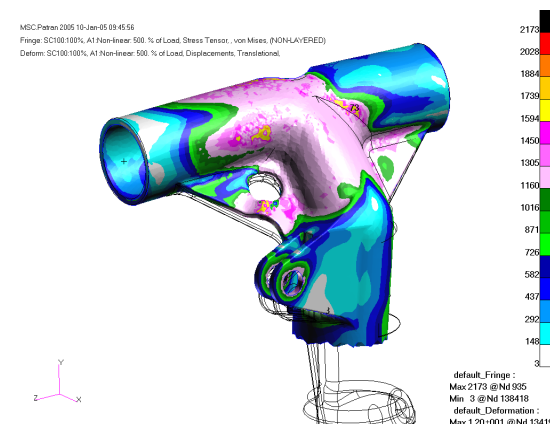
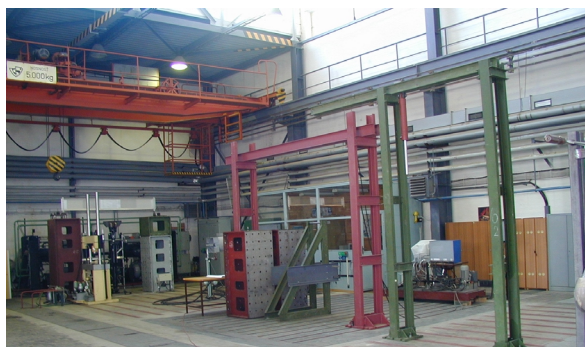


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Technical background

- workplace – allocated by FSI VUT
- equipment – purchase at ARC project 2000-2004
- testing equip., HW, SW





Personal background

68 employees

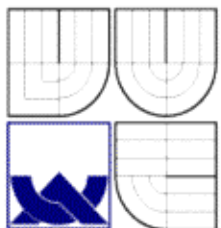
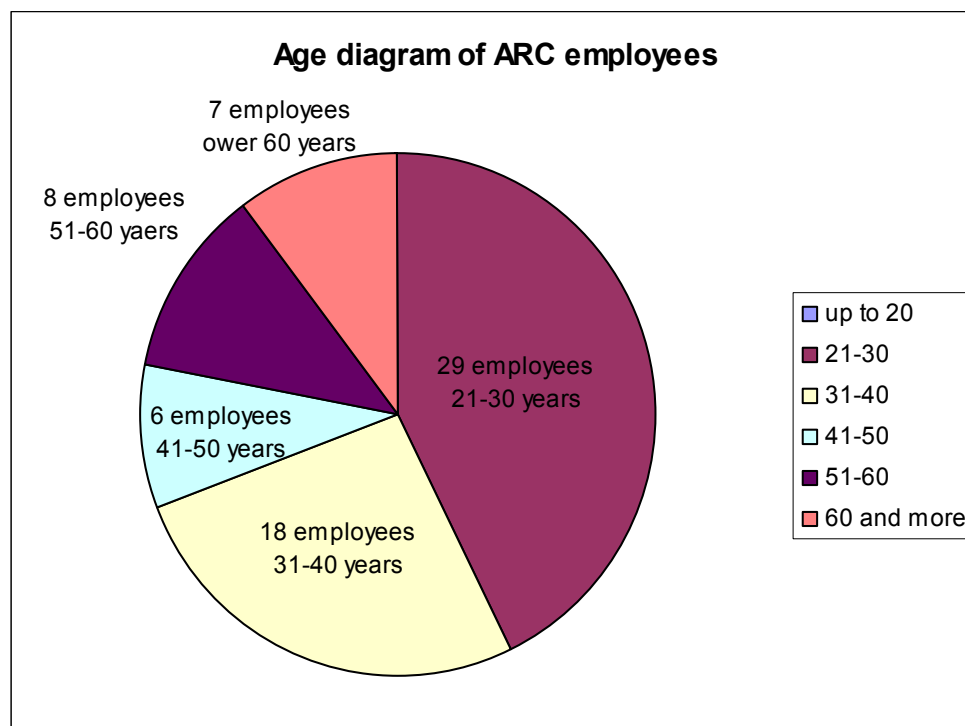
38,1 age average

52,85 global work load

0,78 work load average

Financial support of Ministry:

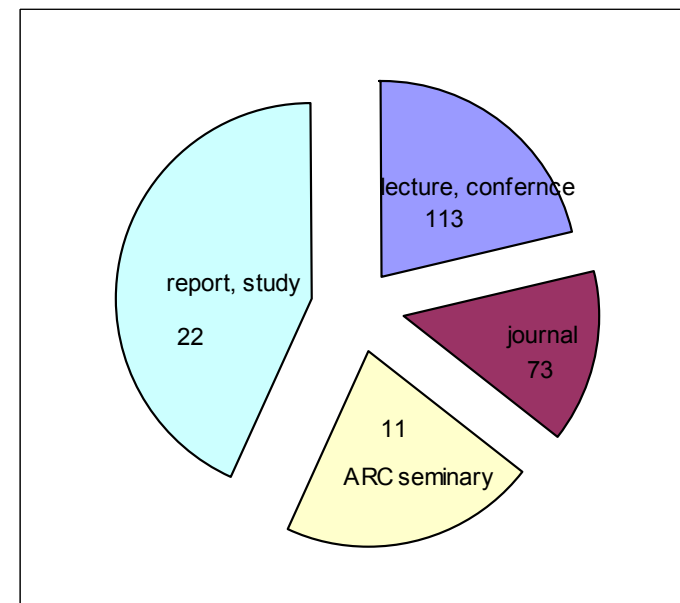
90% of budget



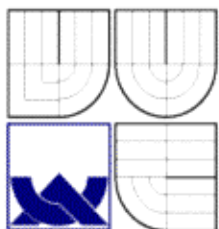


Publication activities – 5 years,

ARC publications		2000	'01	'02	'03	'04	Total	
Brno Univ. of Technology (VUT)	Lecture, conference	12	6	14	18	12	62	209
	Journal	3	2	8	7	5	25	
	Lecture at ARC seminary		8	13	12	8	41	
	report, studies	13	28	13	15	12	81	
Aeronautical Research and Test Institute (VZLU)	Lecture, conference		6	8	3	5	22	241
	Journal		5	13	11	7	36	
	Lecture at ARC seminary		14	15	14	12	55	
	report, studies	16	30	30	29	23	128	
Czech Tech. University (CVUT)	Lecture, conference		6	6	8	9	29	75
	Journal		4	2	2	4	12	
	Lecture at ARC seminary		2	5	2	7	16	
	report, studies	3	3	4	2	6	18	
Total		525						

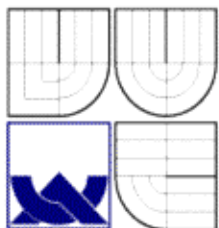
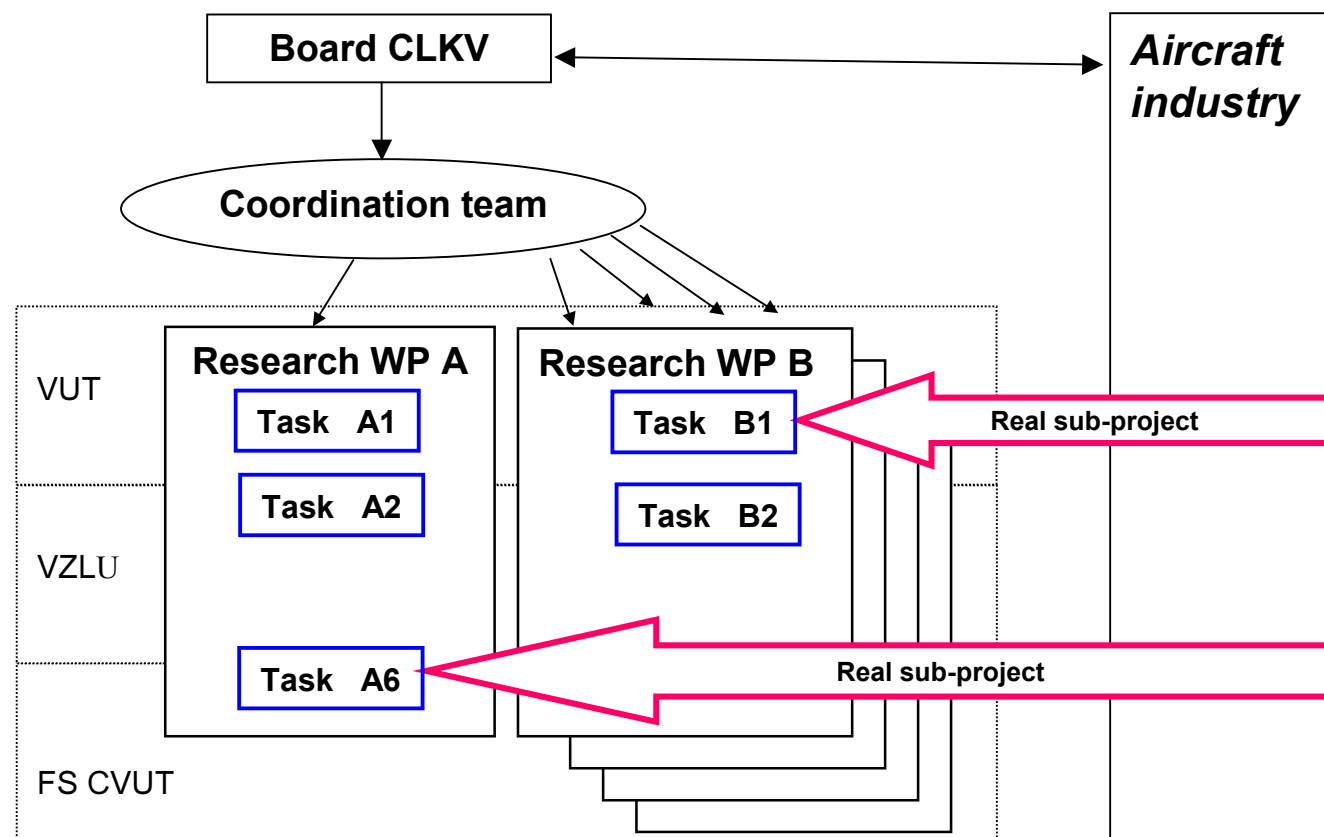


From 2000 to 2004 the 9 Ph.D. students graduated as ARC employees.





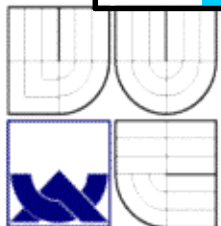
ARC management system





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WP	Task		Personnel			
			unit coordinator / task head personnel/years	Person-years		
				CTU	ATRI	BUT
A		<i>Aerodynamics and Flight Mechanics</i>	Holl	9.5	35	37
	A1	Flow fields research in aviation applications	Anderle	9.5	0	0
	A2	Progressive methods in aerodynamics	Popela	0	8.5	10
	A3	Flight loads in co-relation with computations	Jebáček	0	0	14
	A4	Aerodynamic research of the potential aircraft with fixed wing	Holl	0	16.5	4
	A5	Acoustic load in aviation traffic	Šloufová	0	10	4
	A6	Prediction of inner environment in aeroplane cabin	Jícha	0	0	5
B		Modern technologies for aviation applications	Bělský	0	8	11.25
	B1	Fibre-metallic laminates and low-cost composite technologies	Klement	0	0	7.5
	B2	Progressive technologies of structural jointing	Bělský	0	5	0
	B3	Impact of environment on the life-cycle of materials and surface finish	Valeš	0	3	3.75
C		Propulsion systems	Hanus	22	25	0
	C1	Numerical modelling of the flow in rotating devices	Hečl	0	5	0
	C2	Increase of effectiveness and safety of the fan drive	Hanus	22	0	0
	C3	Advanced aerodynamic methods in propeller design	Dostál	0	10	0
	C4	Advanced diagnostic methods	Lamka	0	10	0

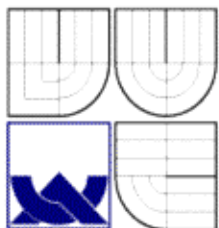


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id		Task name	Personnel			
WP	Task		unit coordinator / task head personnel/years	Person-years		
				CTU	ATRI	BUT
D		Structure design, strength and durability	Juračka	34	12	34.25
	D1	Research in means of improving passive safety of aircrew and passengers	Šplíchal	0	0	7.5
	D2	Reliability of aeroplane equipment and systems	Merkl	0	7	2
	D3	Aeroelasticity	Slavík	12	0	5.5
	D4	Strength of composite structures	Theiner	22	5	5
	D5	Structural optimisation	Píštěk	0	0	6.5
	D6	Fatigue and durability of composite structures	Juračka	0	0	7.75
E		Space research	Fedossov	0	17.5	1
	E1	Research for the design and tests of space devices	Fedossov	0	17.5	1
	E2	Universal on-board computer for the use in aerospace and aviation technologies	Pobořil	0	0	0
F	F1	Economic and legislative aspects and applications of research results	Paiger	0	2	1
Employees without specialization				7.5	5	18.5
TOTAL				65.5	99.5	84.5



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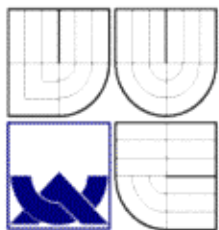
Role of Aircraft Industry

1. request definition at application research = real project
2. use of research results in practice
3. education of research employee at ARC (postgraduate study)
4. using laboratories and sw equipment to train industrial employees
5. data support for marketing analysis



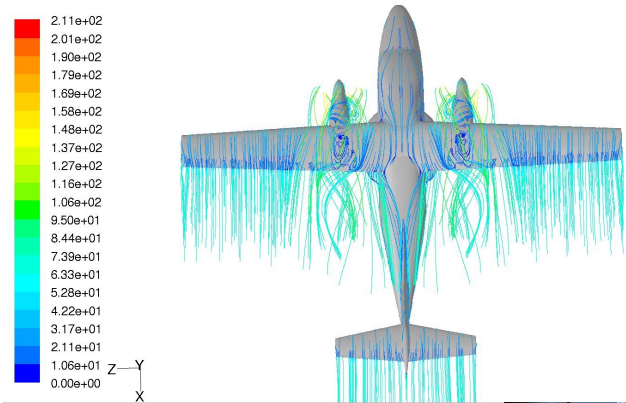
Today projects

1. VUT – 100innovation,
2. EV-55 new commuter aircraft,
3. G304 S new composites sailplane,
4. TST -14 new composite UL sailplane.





Role of Aircraft Industry



Path Lines Colored by Velocity Magnitude (m/s)

