Coupled - Engine Power Unit

Institute of Aviation, Poland
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The Coupled Engine Power Unit (CEPU) idea could be a proposition for the next generation power pack for future small-size GA aircraft. It is an alternative advanced propulsion.
Preliminary analysis of CEPU power system configuration on the I-23 plane – Two Rotax 914F engines (2 x 115 HP), compared to the shield of actual single engine (Lycoming 360)
The CEPU idea allows to:

- build twin engine aircraft with single engine mount,
- security (unit of two engines),
- gyroscope and torque moments are zeroed,
- vibration level is reduced,
- aerodynamic drag of aircraft is reduced.
Source of Idea …

Engine Powered Parachute Wing PARAFAN

The patented power unit consisted of the KFM piston engine and two counter-rotating over-ducted propellers. Two counter-rotating propellers eliminate reaction and gyroscopes moments easing control of the machine.
Prognosis of our Idea development

Workshop
IoA Warsaw, July 7-8, 2009

Classic: single or two engines
Coupled - Engine Power Unit
Compact Piston or Electric Engine

Today
For 3 - 6 years
Future

General Aviation and European Air Transport System - Third Call FP7
Future applications of CEPU idea
Patent application

General Aviation and European Air Transport System - Third Call FP7
Objectives:
• Coupled Piston Engines Unit for very small-size GA aircraft

Description of work/Technical approach:
• Design and economic analysis CPEU idea for very small-size GA aircraft

Deliverables:
• Evaluation of the CPEU idea for very small-size GA aircraft
Expected results:

- high safety,
- the level of vibration is reduced,
- two engines built-in in aircraft with the single engine mount,
- gyroscope and torque moments are zeroed,
- the aerodynamic drag is reduced’
THANK YOU FOR YOUR ATTENTION

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