

```
elif _operation == "MIRROR_Y":
    mirror_mod.use_x = False
    mirror_mod.use_y = True
    mirror_mod.use_z = False
elif _operation == "MIRROR_Z":
    mirror_mod.use_x = False
    mirror_mod.use_y = False
    mirror_mod.use_z = True

#selection at the end -add back the deselected mirror modifier object
mirror_ob.select= 1
modifier_ob.select=1
bpy.context.scene.objects.active = modifier_ob
print("Selected" + str(modifier_ob)) # modifier ob is the active ob
#mirror_ob.select = 0
#name = bpy.context.selected_objects[0]
#bpy.data.objects[name].name = "test" = 1
```

PHYLOG

ONERA advisor for the certification of embedded computing systems

The DGAC (French Civil Aviation Authority) asked ONERA to propose a methodology and set of certification recommendations for multi-core and many-core processor architectures. These processors have impressive computing capacities in relation to their power consumption and are already commonly used for computers, mobile phones, etc. Their certification for embedded aeronautical use presents difficulties that ONERA's unique expertise is able to resolve.



The challenges of multi-core aeronautical certification

- Lack of predictability of the execution time of the applications on the processors (conflicts of access to resources such as memory, communication means, cores)
- Lack of partitioning between applications hosted on the same processor (interferences between applications)
- Complexity of programming models for new processors
- Sensitivity of electronic circuits to radiative or electromagnetic phenomena

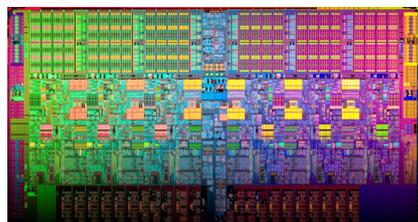
Expected results

- Characterization of families of many-core/multi-core processors according to the problems raised in relation to the certification objectives
- Study of the certification objectives for each family of processors
- Study of the potential means of compliance for each of these objectives
- Exploration of a more generic approach to software certification, enabling the complexity and boundaries with the system and hardware to be better addressed
- Proposal of amendments to the certification objectives in some cases



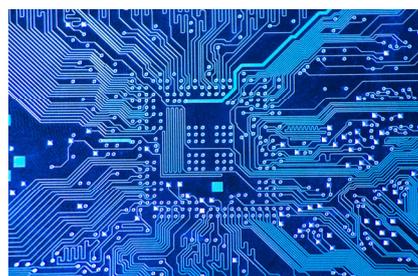
Cooperation Objectives

- Strengthening of its role of advisor before the competent authorities in this field – the DGAC, DGA/TA, EASA
- Contribution of expertise in embedded computing platforms and the development of critical software in the aeronautical certification bodies
- Promotion and use of the results in the scientific community
- Dissemination of the know-how acquired in the scientific community (conferences, workshops, etc.)



ONERA's know-how

- Real-time programming of many-core/multi-core processors
- Safety and security methods for avionics architectures
- Expert in aeronautical standards, and certification argumentation



Many-core and multi-core computing architectures:
a new paradigm for aeronautics,
and a new challenge for certification