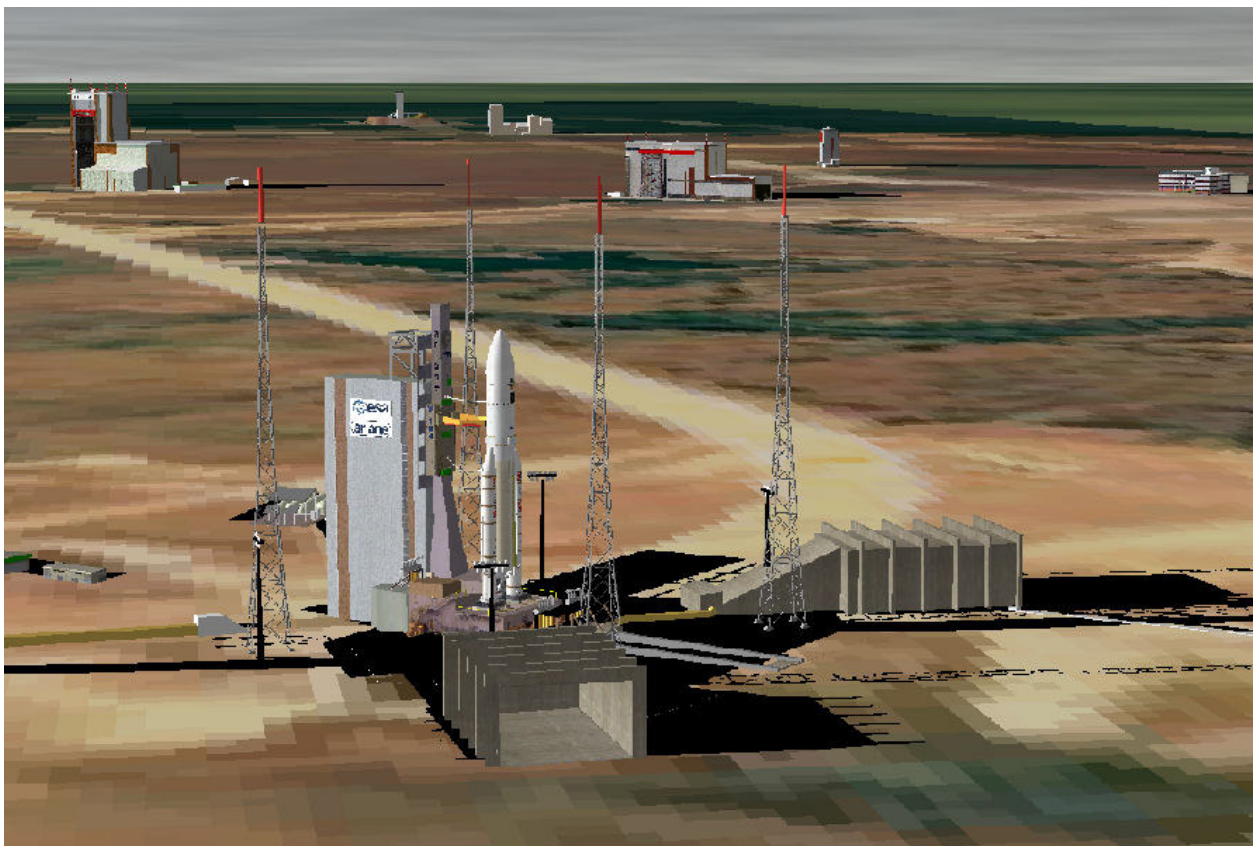




**PACK**  
**KOUROU-CSG : ELA3 & ELA1**  
For Orbiter 2006

**Built by Papyref and Mustard**



## INTRODUCTION

The pack Kourou–CSG : ELA3 was create to have in Orbiter a realistic model of the CSG “Gayana space Centre” localized in French Guyana.

In a first time, the CSG included only the launch area ELA3 (Ensemble de Lancement Ariane N°3 - Ariane Launch facilities #3) use for Ariane 5 launch, with all facilities of assembling. Now we're adding ELA1, which is the oldest pad, with his annexes, and use for Ariane 1, 2, and 3.

Later, we complete the space port ELA2 for Ariane4 and after that the future pads ELV for the small rocket Vega and ELS for Soyouz.

## THE CSG COMPLEX



On this aerial picture, you can see the mark of each area and facilities modelized in this pack. Below, you can see a small description of the aim of each facilities and pictures (real on the left, modelized on the right).



### 1 – ZL3 (Zone de Lancement N°3- Launch area #3)

Usually named ELA3 (ensemble de lancement 3) .It's the launch pad of the rocket Ariane 5.



### 2 - CDL (Centre De Lancement - Operation control Centre)

It's an armored facility, This centre included 2 operation rooms for the flight control. It's not the main flight room "Jupiter".



### 3 – BIL (Bâtiment d'Intégration Lanceur- Building integration launcher)

Here, the launcher is assembling before the final step (BAF)



#### 4 – BAF (Bâtiment d'Assemblage Final – Final Assembly Building)

It's the last step of the assembling. Here the Payload are mounted into the launcher before moving to the launch pad ZL3



#### 5 – BIP (Bâtiment d'Intégration Propulseur – Booster Integration Building)

In this facility the boosters are assembled. After the booster go into the BIL or BEAP.



#### 6- EAP (Bâtiment de Stockage des Propulseurs – Boosters Storage Building)

Localized between the BIL and the BIP, it used for store until 4 boosters for manage the assembling.





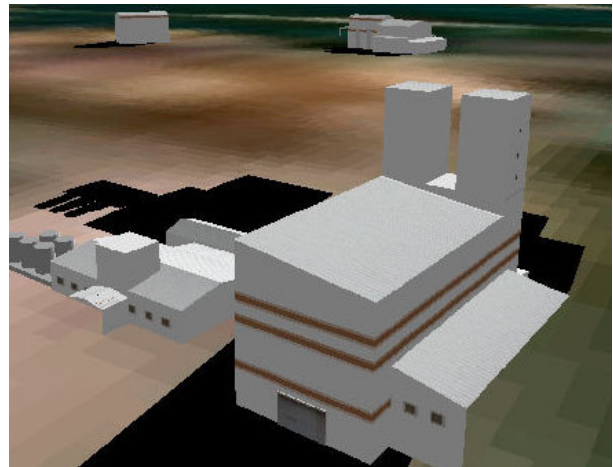
## 7 – BEAP (Banc d'Essai des Accélérateurs à Poudre – Booster Test Building)

It used for test the boosters and can resist a thrust of 320 tons



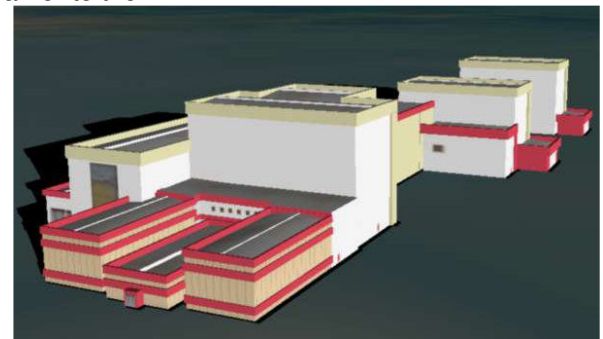
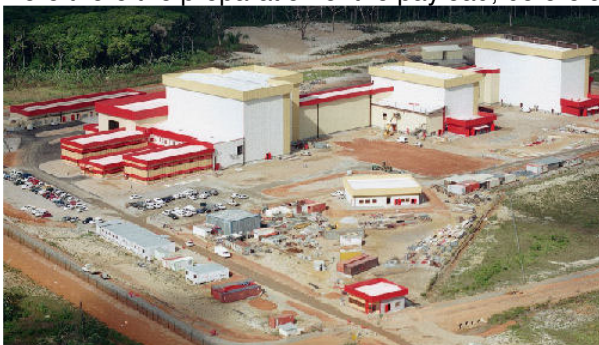
## 8 – UPG (Usine de Production des Propergols Guyanais – Guyana Propellant Factory)

Localized at 1km of the BIP and BEAP, this large complexes of 40 facilities build the material for the booster. There are also a factory for the storage of liquid hydrogen and oxygen.



## 9 –EPCU S5 (Ensemble de Préparation des Charges Utiles – Payload preparation building)

Here there the preparation of the payload, before a tranfer to the BAF



## 10 – ZL1 (Zone de Lancement N°1- Launch area #1)

Usually named ELA1. It's the launch pad for Ariane 1, 2, 3.

We can see the bunker included the Flight Control (on the right), the cooling central (round building), the water tower, and annexes.



## 11 – EPCU S3 (zone de préparation des charges utiles – Payload building area)

This area includes some buildings where the payload is prepared for assembly on the rocket. The payload is installed in the fairing in the building on the pad. This building moves until the rocket for preparing the installation and the rocket.

Three buildings are realized:

- the S3A building which is used for final assembly of the payload and their own thrust intended for the launchers Ariane 1, 2 et 3



- the S3B building is used for final assembly of the payload and down thrust intended for Ariane 4





- the S3C is the technical building (note the car that you can move for visit the centre)



## THE PACK

### Installation

- Unzip the pack on your directory of Orbiter 2006
- Check that Spacecraft3.dll by Vinka is present

### **ATTENTION !**

**This pack work only with ORBITER 2006 and require this launchers used in the scenario files:**

**Ariane\_1-2-3\_v3.zip by Xosema (available on OrbitHangar)**

**Ariane5\_ARD by Well/No Matter (available on the website of Mustard)**

**CVEL-Ariane5\_2\_0.zip by Dh219 (available on OrbitHangar)**

**Read their manuals for the use of this rockets.**

### Specific keys for ZL3 (ELA3)

With the F3 key, if you select the arm of the launch tower named "Zl3arms" you can activate 2 actions:

- Open the arms and fall of the cables with the key G
- Switch on the light on the pad with the num key + ("CTRL +" for keep switch on, and \* for switch off)
- Key 0/suppr of the num pad (Hover) for open/close the Stream on the cable

### Specific keys for ZL1 (ELA1)

With the F3 key, the tower named "Zl1arms" you can activate 3 actions :

- Open the arms and fall of the cables with the key G.
- Switch on the light on the pad with the num key + ("CTRL +" for keep switch on, and \* for switch off)
- Key 0/suppr of the num pad (Hover) for open/close the Stream on the cable

With the F3 key, The building named Zl1tower, 2 actions are possibles :

- Open/close the door of the boulding with the key G.
- Move to front the building to the pad with the key K. The move to back is by CTRL+Shift+K  
Yoçu can stop the moving by the key K

### **Specific keys for the car**

With the F3 key, The car named « Zl1car » (if defined in scenario) can do 3 actions :

- Forward and backward with keys + or – (with CTRL if you want), like a thrust control.
- Turn in mode RCS rotation with the keys 1 and 3 of the num pad.
- Turn on/off the lights with the key 0/suppr of the num pad (Hover)

The car is park on the CDL3, you can use it for visit the centre. Be carefull, no brakes available !

## **TECHNICALS DATA NEEDED FOR THE SCENARIOS**

Some scenarios are avalaible in the pack to test and realize your own scenarios.

### **WARNING !**

If you build your own scenarios you must absolutly include like ships the parts Zl1arms, ZL3arms and Zl1tower with the good positions. In more Zl1arms and Zl3arms must have fuel if you want use lights and stream effects. If you don't do that the launches pad will be incomplete or non functional.

In option, you can include the car named ZL1car for visite the center CSG.

With a text editor, check the join scenarios, pick up the coordonates of this « ships » and place it in your scenario.

If you want a good position on the launch pad you must define that in the scenario file. See this example using Ariane 5 CVEL by David Henderson

```
A5-ATV:ariane5\A5ATV
STATUS Landed Earth
POS -52.559628 5.060049 ;geographic position
HEADING 130.00 ;orientation
HEIGHT -2 ;altitude position over the pad
PRPLEVEL 0:1.000 1:1.000 2:1.
```

### **NOTA :**

It's possible to define the altitude over the pad by two way depending of the model used :

If the model use the CVEL library you must include in the scenario file the line HEIGHT=xx (in meters and we can use – or +)

If the model use the module Spacecraft.dll by Vinka, you must edit th efile .ini of the launcher in the repertory Config/Spacecraft/xx.ini and add the parameter:

```
[MISC]
COG= xx
```

(COG is the altitude over the ground)

**For information, the coordonates of the CSG are -52.53 +5.03**



## THANKS

We thanks everybodies which help us :

- Olivier Sanguy from Espace magazine (Press) for all the pictures of reference.
- CAPCOM for his great website, with lot of details and information about the CSG:  
[http://www.capcomespace.net/dossiers/espace\\_europeen/](http://www.capcomespace.net/dossiers/espace_europeen/)
- Momo for the aerial picture of the CSG.
- Vinka for his great module Spacecraft3 (included in this pack) which provide the moving part on the launch pad (arms and cables).
- Brian Jones for lights method
- Xosema for the series Ariane 1, 2 et 3
- David Henderson for his Ariane 5 CVEL which was very usefull for the tests and scenarios
- NoMatter and Well for Ariane 5 (Vinka module)
- and, of course Martin Schweiger for the awesome Orbiter.

Also, you can find all informations about the future extensions on this forum of the french community and on the website of Mustard where the pack is hosted

- Forum of Dan Steph <http://orbiter.dansteph.com/>
- Website of Mustard <http://mustard02.free.fr/orbiter.htm>  
<http://orbiter.mustard-fr.com> (new website in construction)

Also, we thanks all others persons that we could have forget.

Links:

Orbithangar: <http://www.orbithangar.com/>

David Henderson website: <http://www.aibs.org.uk/orbiter/>

Orbiter official website: <http://www.orbitersim.com>

## USE LIMITATION

This pack is free for use but one commercial use is not authorized.