



C.R.O.P.

Combined regenerative organic-food production

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Development of an open regenerative life support system with food output on the basis of a national :envihab initiative

**DLR-Institute of Aerospace Medicine
Biomedical Science Support Center**





Our Ambition: Life Support System with Food Production:

Conditions as required by DLR

Space Administration:

- Space proof / ModuLES
- Exploration / terrestrial use
- CO₂ recycling
- Microbiological compartments
- Integration of German habitat technologies
- National initiative with public interest
- **:envihab as visible nucleus for life support systems**

Functional Objectives:

- Recycling of organic waste
- Food production
- Enhance the quality of life
- Low energy consumption
- Economic
- Simple handling
- Precondition for closed life support systems



That is known...

- *Hydroponic systems*
- *Vertical farming*
- *Fish farming*
- *Grow boxes*
- *Compact greenhouses*
- ...



Source: NationalGeographics



Source: Glen Kertz, CEO Valcent Products and his development, HDVG



Source: theDesignBlog.org



Source: www.dealzer.com

Art and Interior Design

RIVER PLANT AQUARIUM by Mathieu Lehanneur



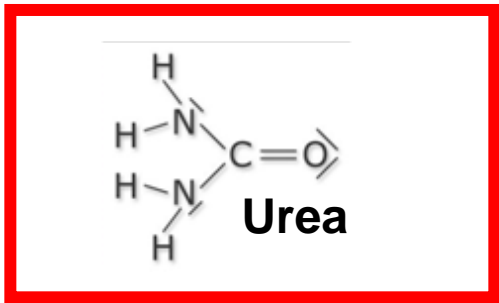
„Design will save the world!“



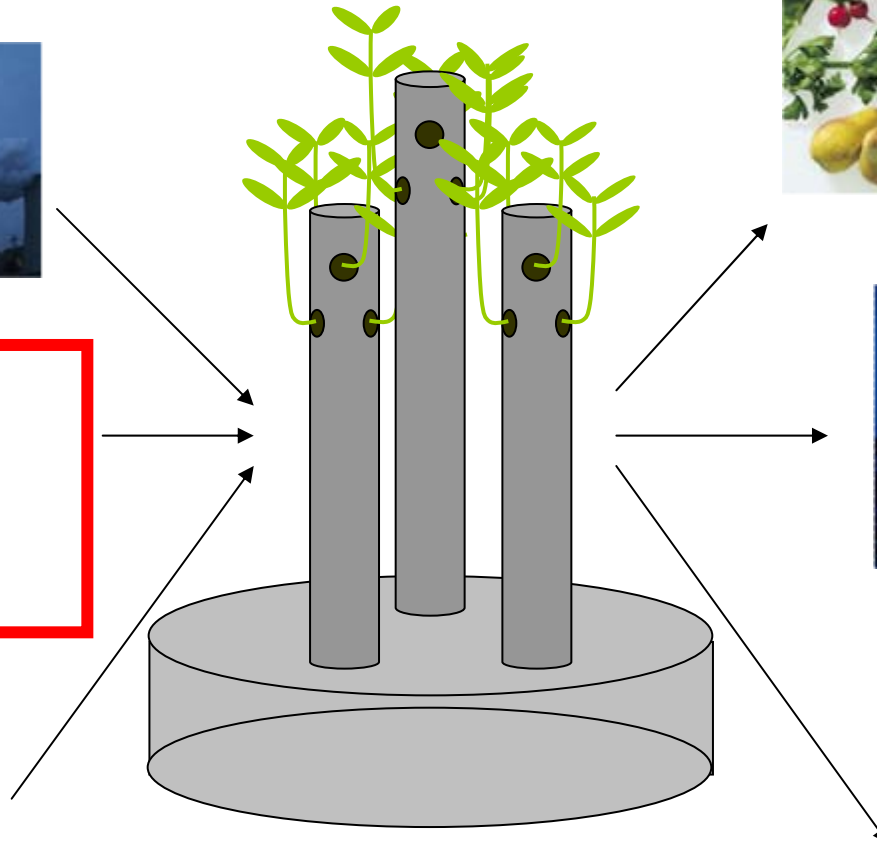
C.R.O.P. – Duties and Responsibilities



Carbon Dioxide



Organic waste



Fresh food



Oxygen



„Well being“

Prototype C.R.O.P.



Capsicum annuum



Euglena spec.



Oreochromis spec.



Biomphalaria spec.



Neocaridina spec.

From Seed to Seed. - Our First Results.

25.01.2011



10.03.2011



23.02.2011



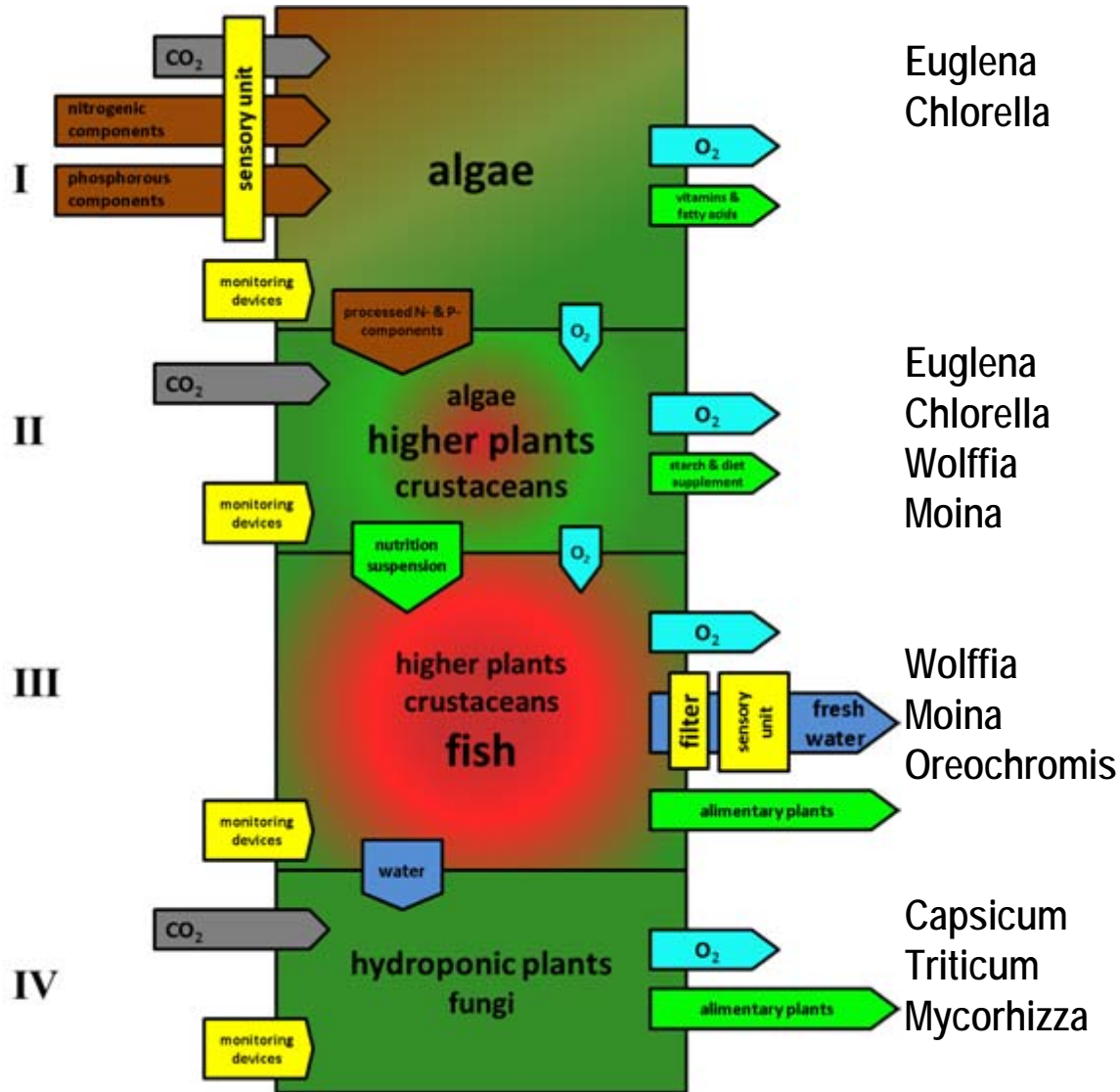
29.04.2011



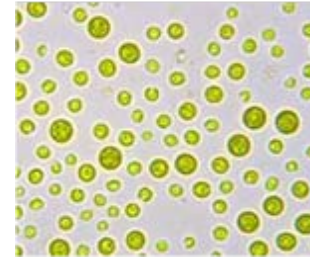
12.12.2010



03.01.2011



Euglena
Chlorella



Euglena
Chlorella
Wolffia
Moina



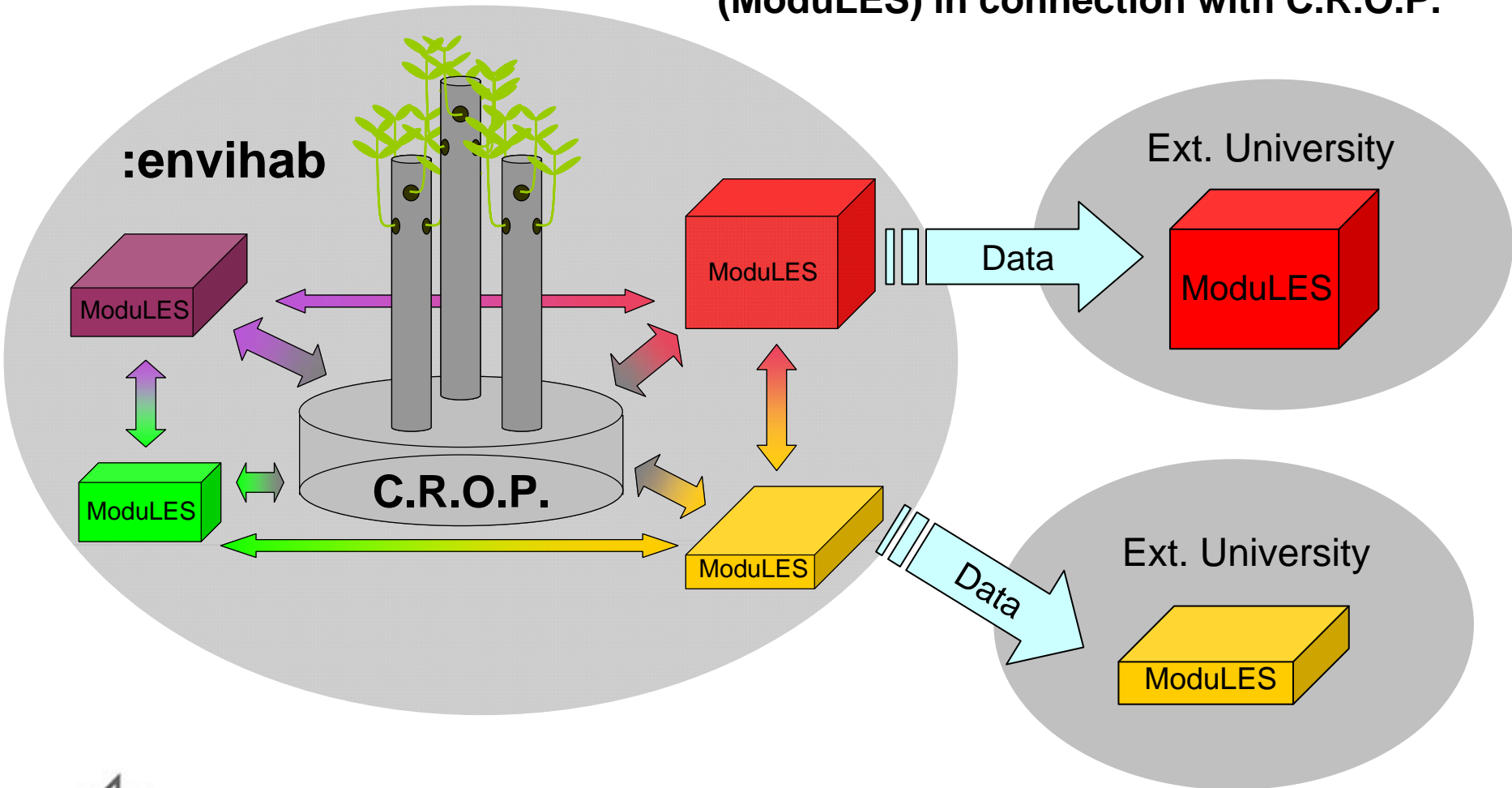
Wolffia
Moina
Oreochromis

Capsicum
Triticum
Mycorhizza

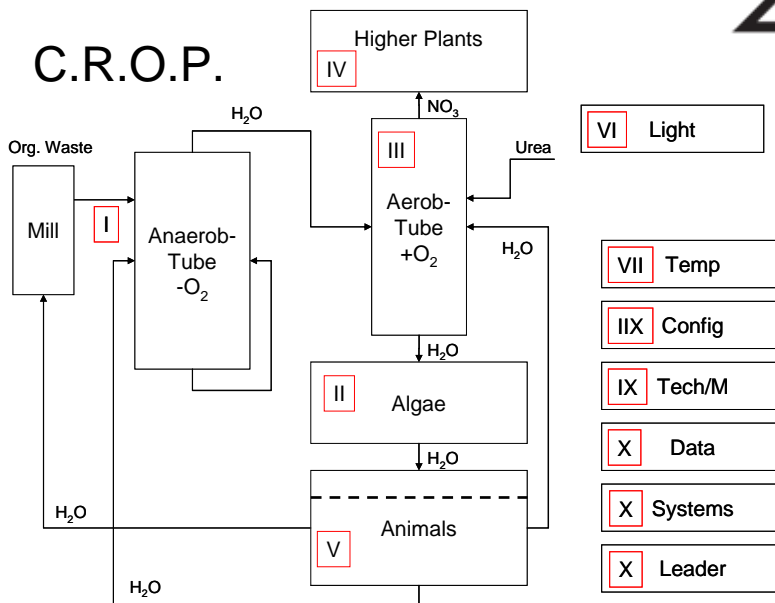


C.R.O.P. in :envihab as Hub for LSS

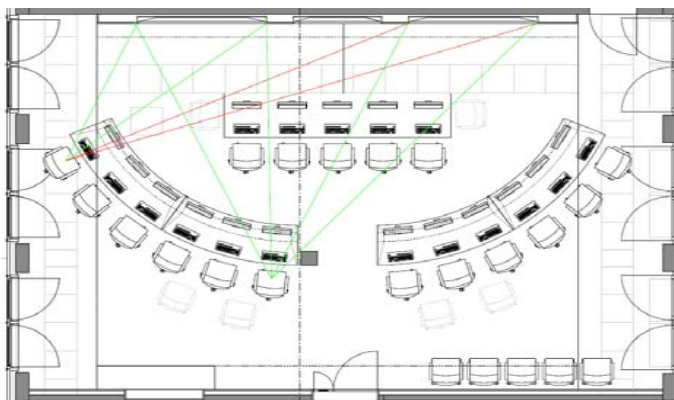
Testing of single life support systems (ModuLES) in connection with C.R.O.P.



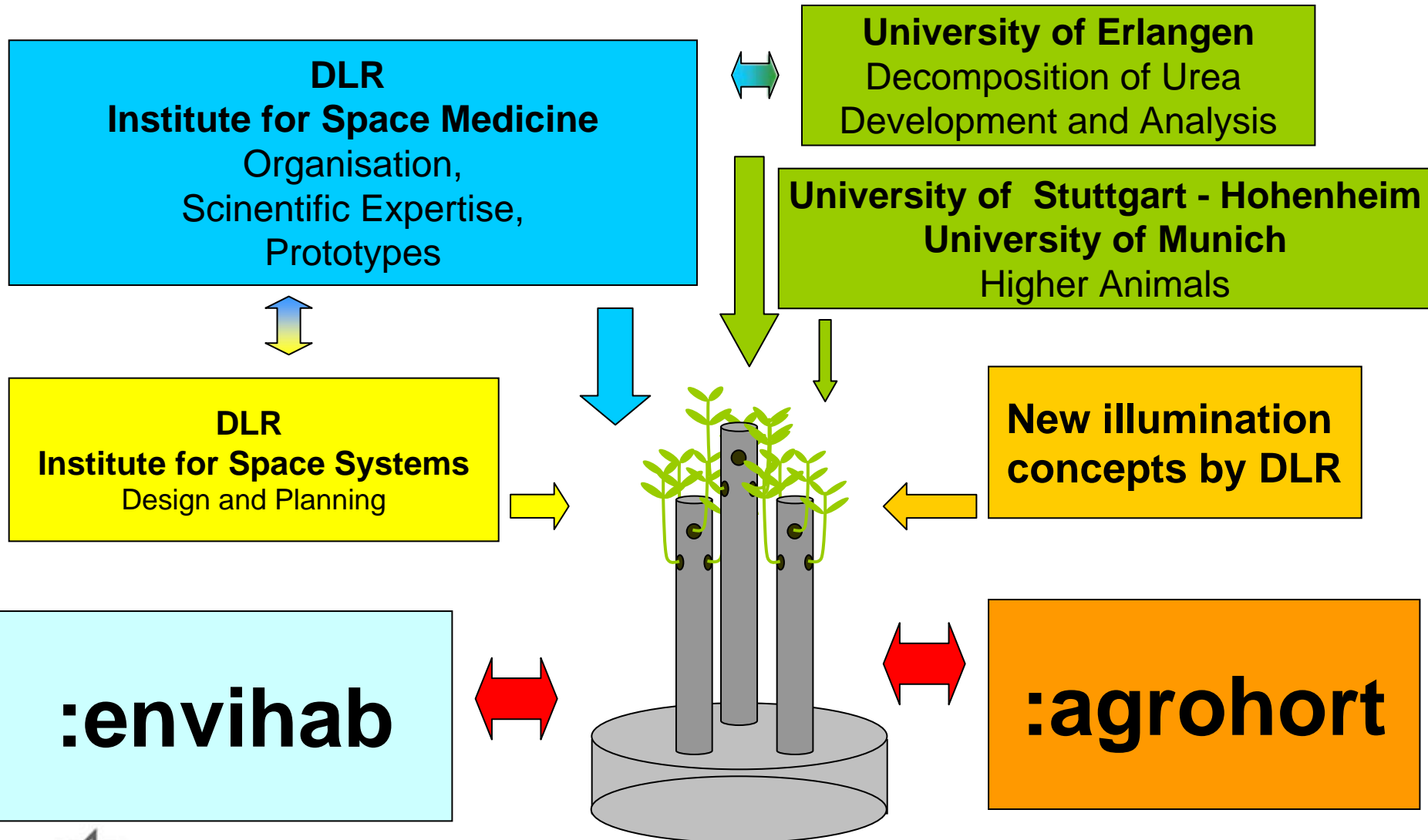
DLR Institute for Space Systems in Bremen



CEF Design Laboratory



Network and Cooperations



Thank You For Your Attention!

