THESEUS Final reporting

Description of the main S & T results/foregrounds

Figures and table

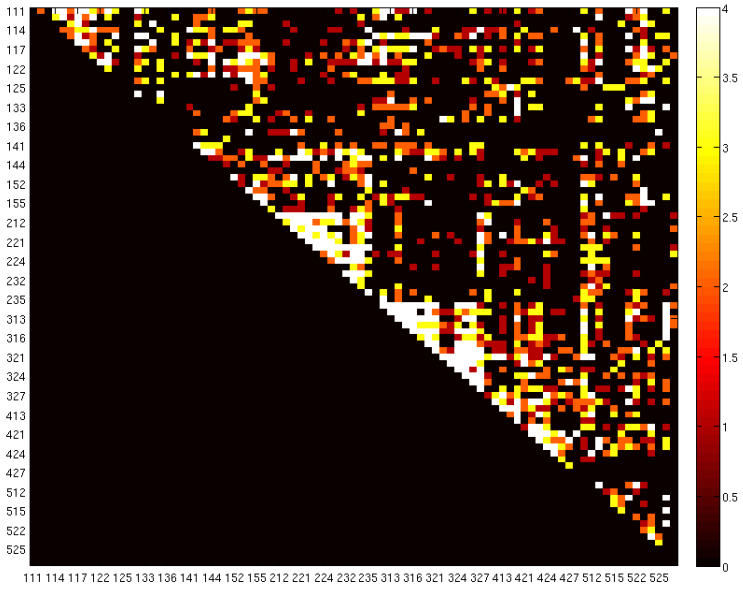

Fig. 1: Interaction matrix between the Key Issues (the lighter the higher)

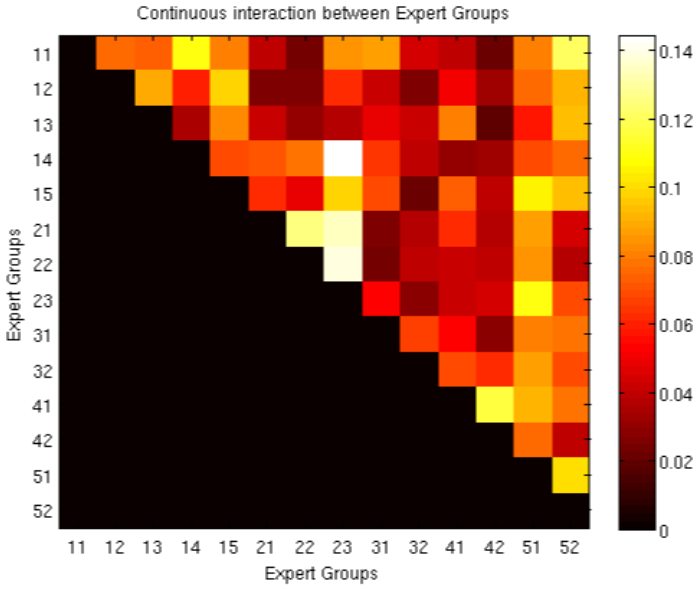

Fig. 2: Interaction matrix between the 14 Expert Groups (the lighter the higher)

HUMAN SYSTEMS	STRESSORS									
	High *g* during launch and entry	Microgravity	(Moon, Asteroid,	Radiation	Microflora	environment (dust, atmosphere)	Chronobiological factors	Nutrition	Confinement	Remoteness
Bones and muscles	+	+++	?	+	?	?	+	++	++	**Ø**
Heart, lung and kidney	++	+++	?	+	+	+++	+	++	++	**Ø**
Immune system	?	+++	?	++	+++	++	?	++	++	?
Genetic system	**Ø**	?	?	+++	?	?	?	?	?	?
Neurosensory system	+	+++	?	++	?	?	++	?	?	?
Behaviour	+	++	?	++	?	+	+++	++	+++	+++
General Health	?	+++	?	++	++	+++	++	+++	++	+

Table 1: Impact of spaceflight stressors on crew (+++ high; ++ medium; + low; ? not known; Ø No impact)

COUNTERMEASURES	STRESSORS									
	High g during launch and entry	Microgravity	Hypo gravity (Moon, Asteroid, Mars)	Radiation	Microflora	environment (vacuum, dust, [illegible])	chronobiology	Nutrition	Confinement	Remoteness
psychological and skill maintenance countermeasures	+	+	+	Ø	Ø	Ø	+	+	++	++
Shielding	Ø	Ø	Ø	+++	Ø	Ø	Ø	Ø	+	+
Medication	+	+	+	+	++	+	++	+	+	+
exercise countermeasures	+	+++	++	Ø	?	+	+	+	+	+
Nutrition	+	++	++	+	+	Ø	+	+++	+	+
Habitat design and safety	+	++	++	+++	+++	++	+++	+	+++	+++
Mission Planning	+	++	+++	+++	+	+	+++	+	++	+++

Table 2: Countermeasures effects to mitigate the effects of stressors (+++ high; ++ medium; + low; ? not known; Ø No effect)

HUMAN SYSTEMS	COUNTERMEASURES						
	l and skill maintenance countermeas	**Shielding**	**Health care including Medication**	**exercise countermeas ures**	**Nutrition**	**Habitat design and safety**	**Mission planning**
Bones and muscles	**Ø**	+	++	+++	++	?	+++
Heart, lung and kidney	**Ø**	+	++	+++	++	++	+++
Immune system	?	++	++	+	++	+++	++
Genetic system	?	+++	++	?	+	?	+++
Neurosensory system	++	++	++	+	**Ø**	+	++
Behaviour	+++	++	++	++	++	+++	+++
General Health	++	+++	+++	+++	+++	+++	+++

Table 3: Efficiency of countermeasure on human systems (+++ high, ++ medium, + low, ? not known, Ø No effect)