

Lucerne University of
Applied Sciences and Arts

**HOCHSCHULE
LUZERN**

Technik & Architektur

BioTechnology Space Support Center (BIOTESC) und deren Kommunikation

Chiara Burkhardt

20.04.2022

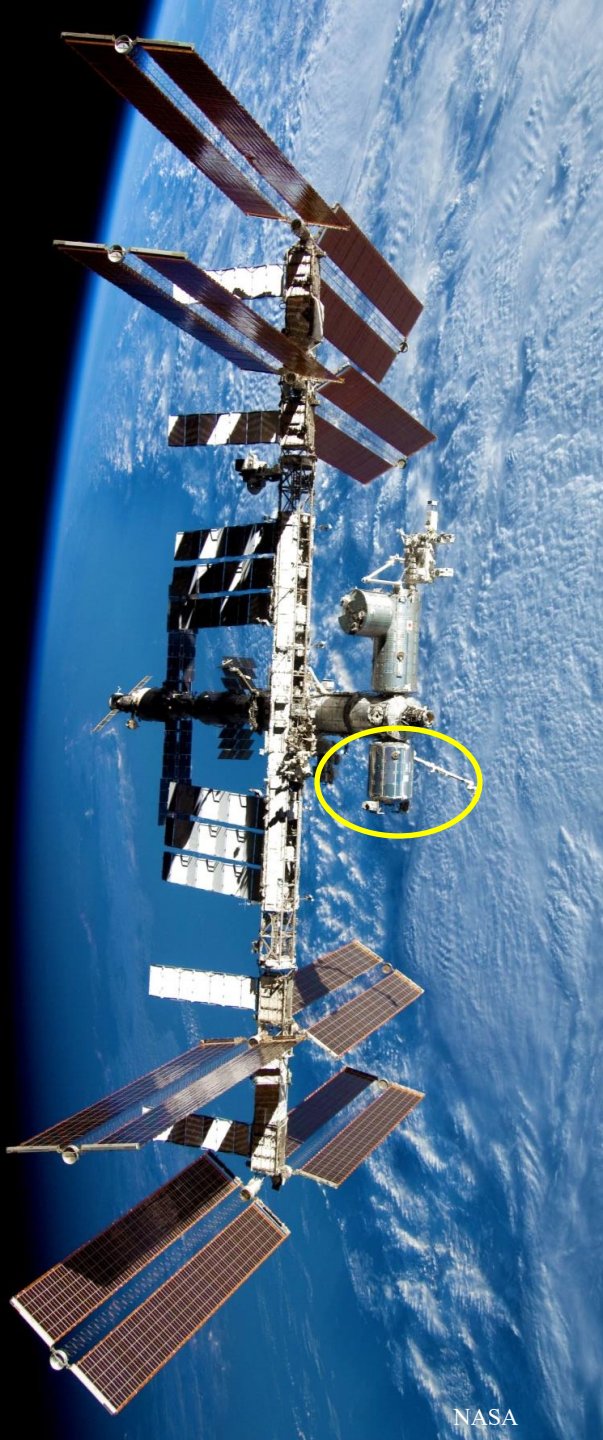


FH Zentralschweiz

Ablauf

- Was ist die ISS? Columbus Modul?
- Was macht das Kontrollzentrum? BIOTESC?
- Kommunikation mit der ISS
- Kommunikationsspiel
- Nachbesprechung

Columbus Weltraumlabor



NASA



Technische Daten

Länge	7 m
Durchmesser	4.5 m
Masse	10'300 kg

INTERNATIONAL SPACE STATION PANORAMIC TOUR

<http://esamultimedia.esa.int/multimedia/virtual-tour-iss/>





5 ESA Supportzentren in Europa

European USOCs
User Support and Operations Centres



Bindeglieder
zwischen
Wissenschaftler
und ISS

Columbus Control Center
Munich, Germany

Kontrollzentrum in München



BIOTESC



KUBIK Inkubator

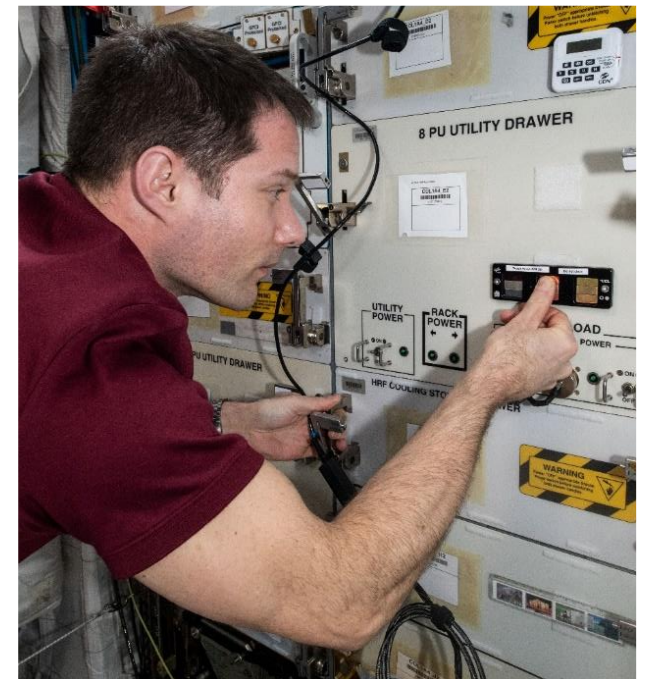
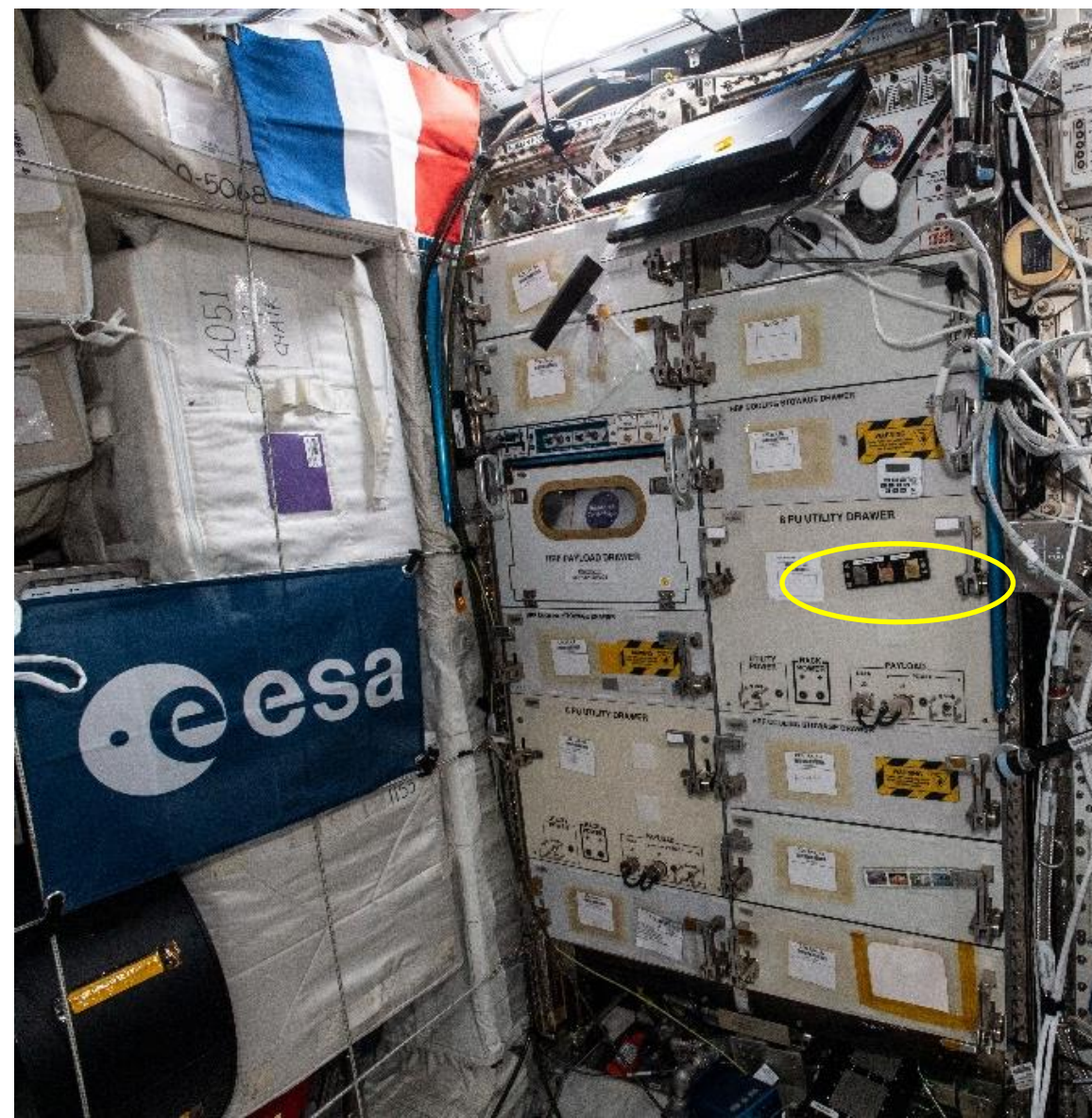


Touching Surfaces



- Touch Arrays mit 3 unterschiedlichen Metallen und 3 verschiedenen laserstrukturierten Oberflächen
- 5 Touch Arrays waren in der ISS installiert (Columbus, Node 2, Node 3 und the US Lab)
- Das Experiment hat bis vor 2 Monaten in der ISS stattgefunden
- Die Astronauten wurden ermutigt die Touch Arrays einmal pro Woche über 25 Wochen anzufassen

Touching Surfaces



Zeitplan

EPO-TOUCHS-DEINST		Completed	084/16:05 - 16:35
FE-13			
Execution Note			
Perform last Touching Event according to procedure: ESA PODF; SAP - EPO MAURER; 2. NOMINAL; 2.022 - EPO MAURER TOUCHING SURFACES EXECUTION			
Deinstallation of all five Touch Arrays according to procedure: ESA PODF; SAP - EPO MAURER; 2. NOMINAL; 2.003 - EPO MAURER TOUCHING SURFACES DEINSTALLATION			
FOR REFERENCE ONLY - DO NOT EXECUTE: 65-0422: Touching Surfaces Big Picture Words			
Crew Note			
ssc 25 card 1162			
Ops Note			
Touching Surfaces - Touching, taking pictures, deinstallation and stowage			
To perform the last touching event and then to deinstall all five Touch Arrays from Columbus, US Lab, Node 2 and Node 3. The activity duration includes time for taking a short-range picture before the deinstallation and for stowage of items after the deinstallation.			
Variant Name:			
Open Activity			

COL-RESTRD-

Prozeduren

EPO-TOUCHS-DEINST
FE-13

Completed

084/16:05 - 16:35



Return to Timeline



Open in New Window

#	Location	Restow Location	Item Name	S/N	B/C	Notes	P/N
1	COL1_STBD_Endcone_AFT_DECK 0.5 CTB: 'MAURER & CHILDREN'S CHAIN', S/N 5409, B/C 00239316J	See Restow Below	Touching Surface Pouch	01	100TSF01E	Containing 5 (five) Ziplock Bags for Touch Arrays	DLR-TSF-100
2	COL1F4_J1		Touch Array	01	001TSF01E		DLR-TSF-001
3	COL1A4_E2		Touch Array	02	001TSF02E		DLR-TSF-001
4	NOD2P2-14		Touch Array	03	001TSF03E		DLR-TSF-001
5	NOD3A3-01		Touch Array	04	001TSF04E		DLR-TSF-001
6	LAR156-01		Touch Array	05	001TSF05E		DLR-TSF-001

TOC

Quick Search

Find Proc Find Text Event Code

SAP - EPO MAURER 2.003 - ... SAP - EPO MAURER 2.022 - ...

2.022 EPO MAURER TOUCHING SURFACES EXECUTION

SAP - EPO MAURER/INC65 - ALL/IMPACT S/FIN 07 JUL 21

Menu Print Save Data +[X] Expand All Collapse All

OBJECTIVE:

To touch five Touch Arrays in five different locations in the USOS segment.

[T/P/M Lists Hidden]

1. TOUCHING EVENT

CAUTION

Do not clean your hands before performing the Touching Event, as this will interfere with the collection of the microbes, resulting in improper science execution.



Figure 1. - Touch Array.

Execution Note

Perform last Touching Event according to procedure:
[ESA PDF: SAP - EPO MAURER: 2. NOMINAL: 2.022 - EPO MAURER TOUCHING SURFACES EXECUTION](#)

Deinstallation of all five Touch Arrays according to procedure:
[ESA PDF: SAP - EPO MAURER: 2. NOMINAL: 2.003 - EPO MAURER TOUCHING SURFACES DEINSTALLATION](#)

FOR REFERENCE ONLY - DO NOT EXECUTE:
[65-0422: Touching Surfaces Big Picture Words](#)

Ops Note

Touching Surfaces - Touching, taking pictures, deinstallation and stowage

To perform the last touching event and then to deinstall all five Touch Arrays from Columbus, US Lab, Node 2 and Node 3.
The activity duration includes time for taking a short-range picture before the deinstallation and for stowage of items after the deinstallation.

Crew Note

ssc 25
card 1162

Last Modified: 27-Mar-2022, GMT 086 22:33 by ISS/maur

Activity Attributes

1.1 View the video showing the correct technique to touch the Touch Arrays [Video: Touching Surfaces touching technique](#) (00:25,).

Dokumentenaustausch

Real-Time Operations
GMT 110/13:00:08
BIOTESC-OPS / burkhardt

Create

Templates

Log out

Search and Filter

Sort
Creation time

Type
Show All

Position
Select...

Attributes
Select...

View
Last 14 days

Items/Page
50

Status
☐ Draft
 ☐ Open
 ☐ Review
 ☐ Approved
 ☐ Approved w/ mod
 ☐ Rejected
 ☐ Closed w/ trans
 ☐ Info Only

Search for
ICN/CFN Number

Search text...

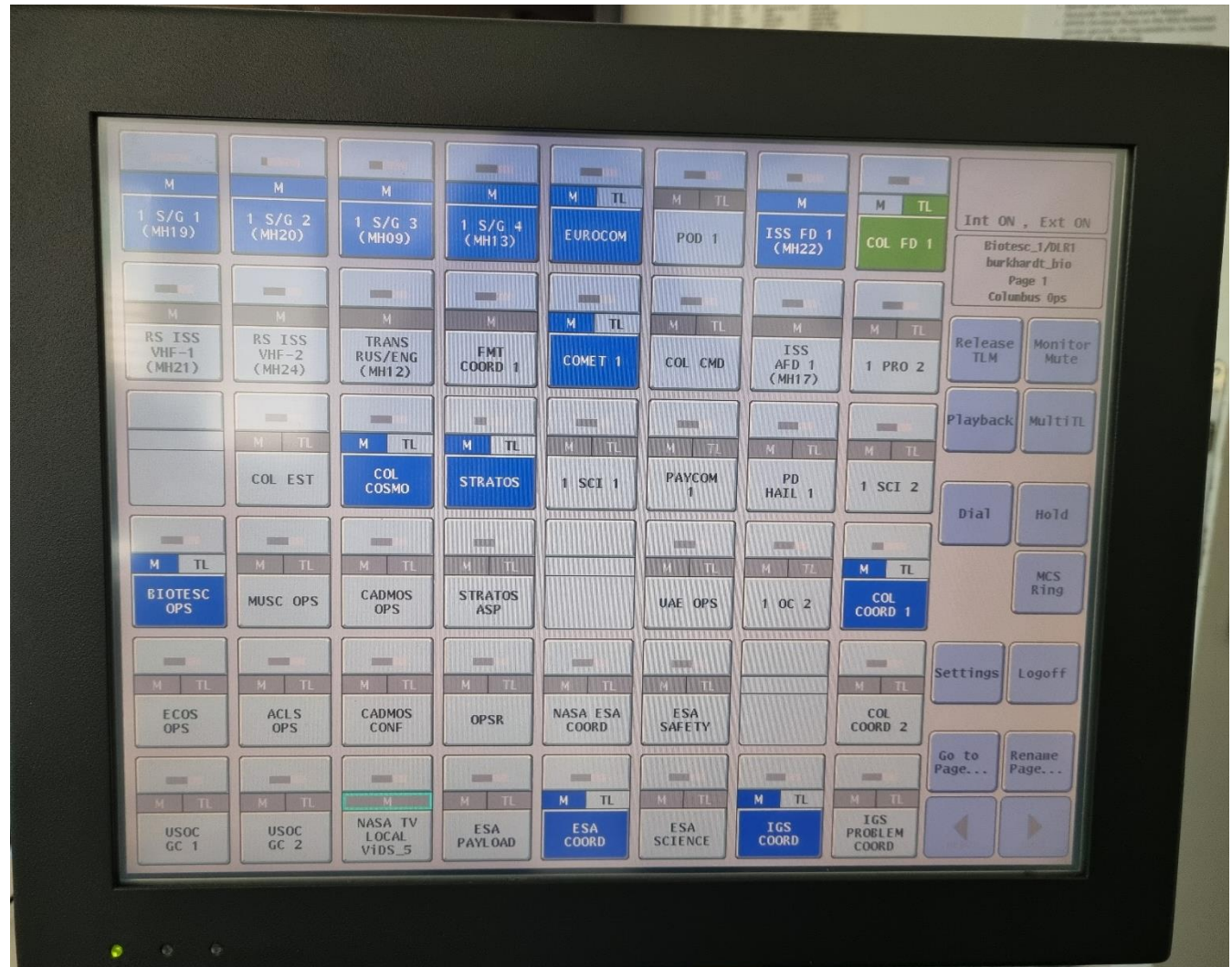
Search

Displaying 1-50 of 58 results

Note ID	Position	Subject	Status	Created	Deadline	Action	
CFN30201	EPIC	R/T CR: E-7 Timeline Review for GMT 116 SLIP (due GMT 110/10:00)	Approved	110/10:42		EPIC	
ICN38053	PASO	E-3 Safety Briefing for GMT113 - GMT114 - GMT115	Open	110/08:53			
ICN38052A	PASO	E-2 Safety Briefing for GMT112	Open	110/08:49			
CFN30200	PASO	Safety Briefing for GMT110	Info Only	110/08:40			
CFN30199	CADMOS-OPS	🔗 Fast ODF Delivery 2.001 MATISS OPERATIONS	Review	110/08:31	111/11:00	PS,CA,EO	
CFN30198	EPIC	Task List Candidates Starting on GMT 113 (Due GMT 109/09:00)	Approved	110/08:19		EPIC,COMET,EU,CS,EC	
ICN38050C	BIOTESC-OPS	Cimon stow	Open	110/08:11			
CFN30197	COL FD	🔗 Flight Rules: Volume B, PCN-94 Published	Approved	110/04:57		FD,ST,PS	
CFN30196A	CADMOS-OPS	🔗 Uplink SEDAC File for EveryWear (Databases update) Due [GMT111]	Approved	109/13:46		COMET	
ICN38046	BIOTESC-OPS	STRATOS to monitor the MPCC Dropbox during AstroPi Challenge 2022	Open	109/11:45			
CFN30194	ECOS	🔗 Fast ODF Delivery 2.001 WICO-2 DATA TRANSFER AND BALLISTOCARDIOGRAPHY EXPERIMENT EXECUTION	Review	109/09:47	111/13:00	PS,EO,EC	
ICN38042D	EPIC	R/T CR: Q&A/Comments for GMT 116	Open	109/08:12			
ICN38041B	BIOTESC-OPS	GMT 109, GMT 110: ISS Tour with Cimon	Info Only	108/15:09			
ICN38039C	EPIC	R/T CR: Q&A/Comments for GMT 115	Open	108/10:09			
ICN38037	EPIC	WLP 05 SLIP EPIC Feedback	Open	108/09:53			
ICN38036	EPIC	WLP 05 EPIC Feedback	Open	108/09:37			
CFN30187	COL FD	🔗 Flight Rules: Volume B, PCN-93 Published	Approved	107/03:55		FD,ST,PS	

Kommunikation

COL FD
BIOTESC
On your loop
For TouchS



Kommunikationsspiel

- 20 Minuten Zeit
- Rollenbeschreibung, Kommunikationshilfe, Notizzettel und zusätzliche Informationen im Mäppchen
- Notizen bitte nur auf die weissen Zusatzblätter und nicht aufs Spiel!
- Kommunikation
 - Angesprochene Person: COL FD
 - Person die spricht: BIOTESC
 - (Auf welchem Kanal: On your loop)
 - (Thema: For Touching Surfaces)
- Probiert die vorgegebenen Ausdrücke zu verwenden (copy, go ahead etc.)



HSLU Hochschule
Luzern



**Vielen Dank für
eure
Aufmerksamkeit 😊**

BIOTESC Open day

Das Schweizerische Raumfahrtzentrum öffnet seine Türen

ORT

Universe9
Obermattweg 9
6052 Hergiswil

PROGRAMM

15:00 Türöffnung
15:15 Start der Führungen
16:00 Grillplausch



**Bernd
Rattenbacher**

Manager, OPS

Kubik / EPO

+41 41 349 36 19
bernd.rattenbacher@hslu.ch



**Christian
Rösch**

Deputy Manager
PA/QA Deputy, Training, OPS

Biolab / EPO / Kubik / AstroPi

+41 41 349 36 27
christian.roesch@hslu.ch



**Jeannine
Doswald-Winkler**

PA/QA, OPS

Kubik / EPO

+41 41 349 36 13
jeannine.winkler@hslu.ch



**Magdalena
Herová**

PR, OPS

Kubik

+41 41 349 36 28
magdalena.herova@hslu.ch



**Gwendolyne
Pascua**

Security Manager, OPS, GC

Cimon / EPO / Biolab

+41 41 349 36 35
gwendolyne.demoulin@hslu.ch



**Roland
Stocker**

OPS, GC

AstroPi / Biolab

+41 41 349 32 01
roland.stocker@hslu.ch



**Fabienne
Wyss**

OPS

Kubik / EPO / AstroPi

+41 41 349 30 30
fabienne.wyss@hslu.ch



**Vincent
Salvadori**

GC, OPS,
Deputy Security Manager

+41 41 349 35 63
vincent.salvadori@hslu.ch



**Chiara
Burkhardt**

OPS, PR

Kubik / EPO

+41 41 349 32 74
chiara.burkhardt@hslu.ch