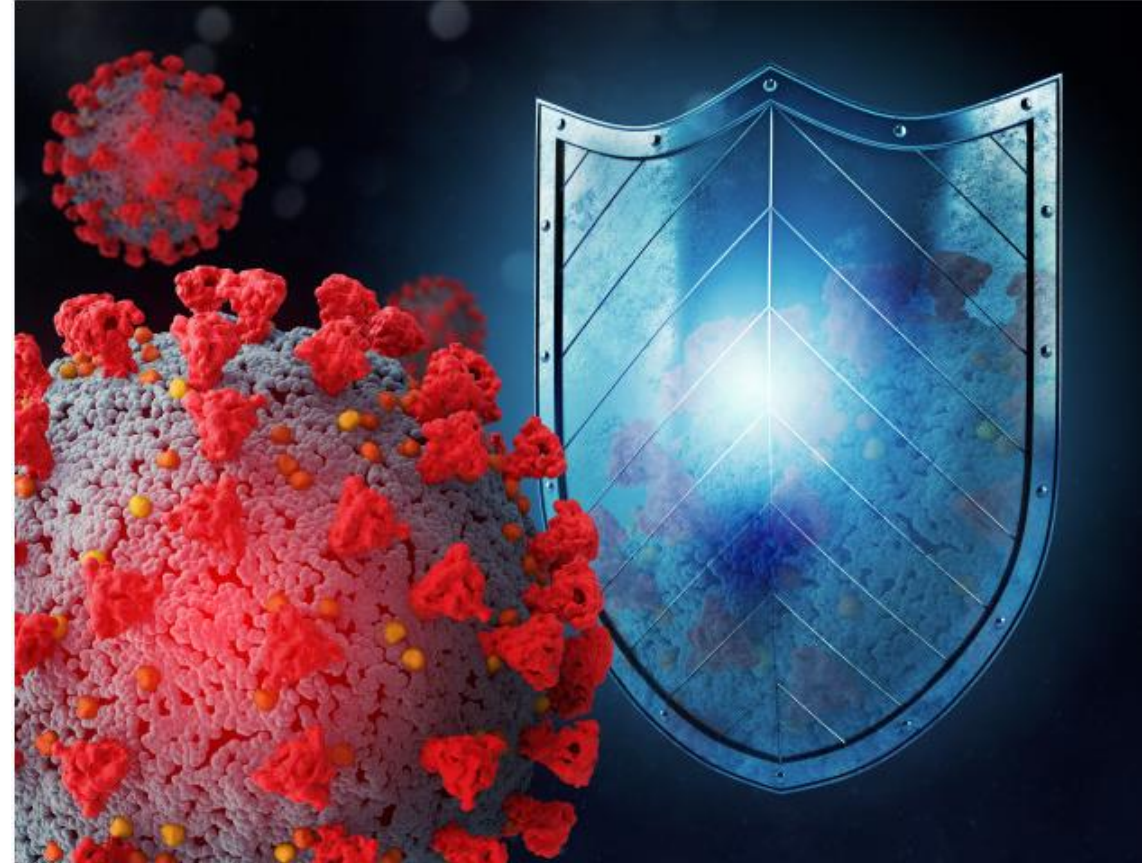
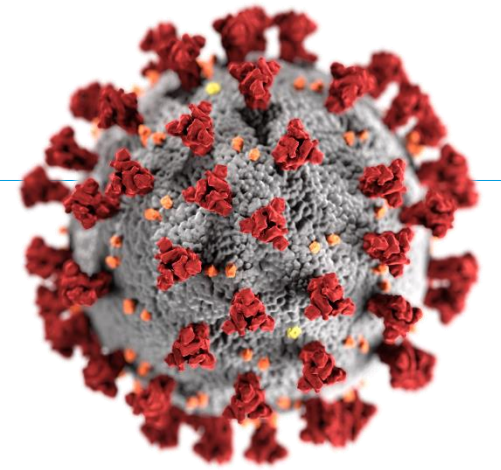


WELCOME TO THE WEBINAR:

ITEMS TO BE CONSIDERED  
FOR TURNAROUNDS IN CASE  
OF A PANDEMIC ATTACK





## CHALLENGES

- The coronavirus pandemic is currently posing major challenges to many people and also to companies. The past months have demonstrated: only together can we succeed in overcoming this crisis. The well-being of our employees and supplying our customers in the best possible way have the utmost priority for us.
- Due to the high concentration of work and employees during Turnarounds, additional risk mitigation measures are necessary to fight against the spread of the corona virus.
- Main challenge is to implement the local, regional and site regulations into a practical way for the Turnaround. Countermeasures in regard to Organization, Infrastructure, PPE's, Communication, Execution and Crisis Management has to be set up.
- This presentation gives an overview of items to be considered for a Turnaround during such a pandemic and is prepared by the Issue group TAR of the EEPC. This Group is lead by Kris Bakelants (chairman) and Werner Van Acker (vice-chairman)

## KRIS BAKELANTS

- 30 years experience
  - 18 years TAR/maintenance BASF
  - 6 years operations/maintenance Kaneka
  - 6 years consultancy Manager
  
- Actual BASF Technology Manager Petrochemicals
  - Improvements Asset - Maintenance - TAR Mgmt
  
- Chairman EEPC TAR Issue Group





## WERNER VAN ACKER

- 35 years experience ( 10 years TAR/technical Services EVONIK - 15 years maintenance & Utilities HENKEL - 10 years consultancy Manager )
- Technical Governance Manager Evonik Technical Services Antwerp
  - Leader Evonik Global Shutdown & TAR competence Center



## AIM OF THIS WEBINAR

Share knowledge, experiences and good practices to be considered during Turnarounds in case of a Pandemic attack.

We collected existing best practices from the members of the EEPC TAR issue group

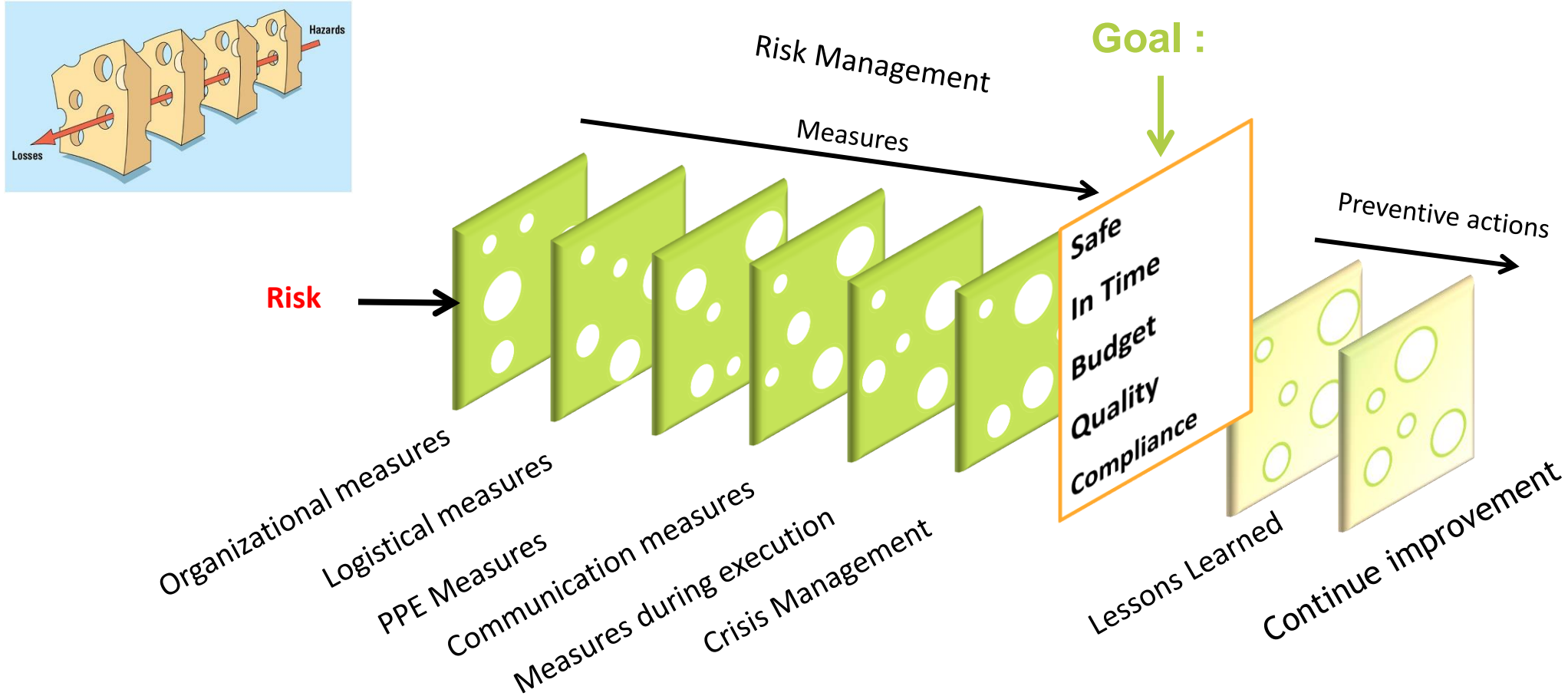
The following EEPC companies participated in this document :

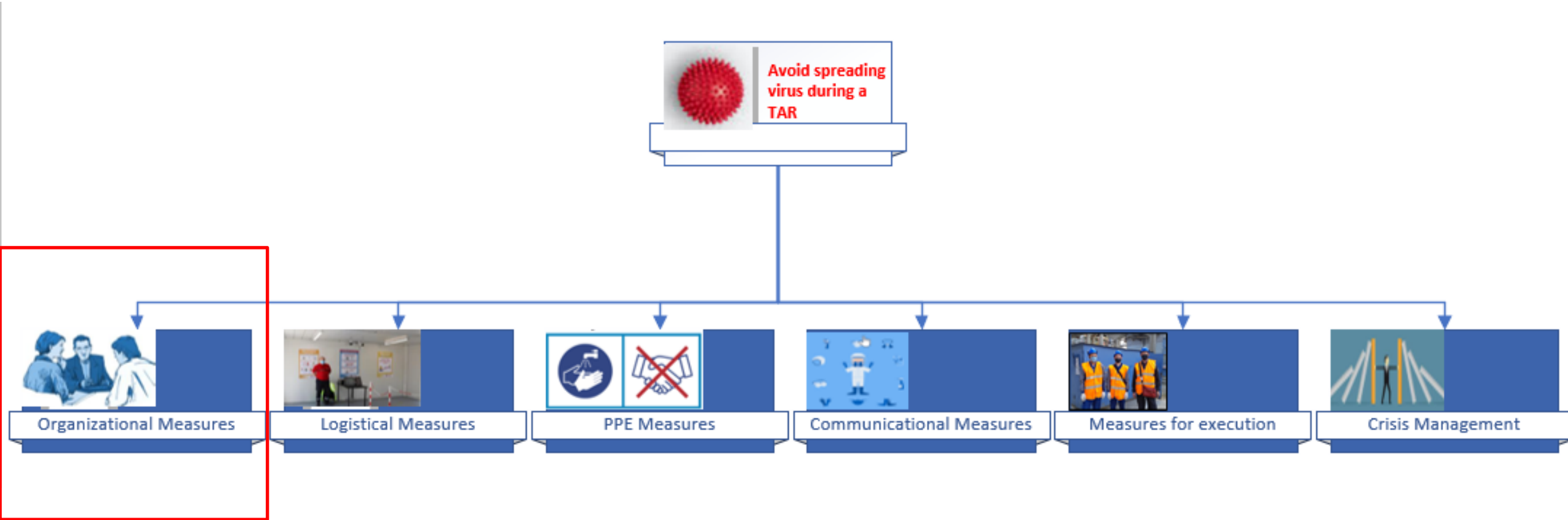
BASF ENI-VERSALIS EVONIK LYONDELLBASEL SIBUR-TOBOLSK TOTAL

## AIM OF THESE GOOD PRACTICES

**Prevent the spread of the virus during Turnarounds**

## Measures COVID-19 Pandemic during Turnarounds





## SCOPE ASSESSMENT

Reduce / postpone scope

- Leave regulatory items
- Do only absolute necessary repairs
- Cut as much as possible all MOC's and Capex
- No improvements or replacements
- Cut reliability items or extend revision intervals based on acceptance of lower reliability

The result needs to be in accordance between production and maintenance



## INTEGRATE “COVID” IN THE PROJECT RISK ASSESSMENT

Standaard Risico analyse Stilstand

Naam: P. Otten / J. Buijckers / D. Bosthuis

Stilstandsverantwoordelijke: RE / SJ/SI

Periode: Maart 2020

Risico	J	N	R/VF	Voorontgagsmaatregel
Kwaliteit voorbereiding onvoldoende	X			Werkplaketten beschikbaar – Planning in MS project – RA uitgangspunt waar nodig – Langere tijd tussen verbod en start van de werf. Grotere beperkte beschikbaarheid TC's kan er nog (tijdelijk) scope bijgevoegd worden, elke extra scope formeel door te geven aan uitvoering/coördinator.
Laattijdige scopewijzigingen	X			Op 15-6-17/3 is er een kleine stilstand op MIE1 (korte termijn). Geen andere grote stilstanden in Ant. gepland.
Beschikbaarheid TS personeel	X			Verwijzen van contracten.
Beschikbaarheid Productie personeel	X			Alle raamcontracten vooraf gecontracteerd, voldoen aan richtlijn voor aanremers.
Compantias Raamcontractoren	X			Mogelijke nieuwe contractor voor aervingen vaststellen.
Nieuwe raam-contractor	?			Werd vooraf geverifieerd door visiecoördinatoren, indien van toepassing zullen vooraf extra geschaald worden.
Nieuwe (sub)contractor personeel bij raamcontractoren	X			Competenties niet raamcontractoren
Beschikbaarheid materialen	X			Alles besteld via SAP – opvolging via SAP
Beschikbaarheid contractoren tijdens stilstand	X			Geen voert van grote stilstanden in Antwerpen haven
Kwaliteit uitvoering	X			Toezicht vakcoördinatoren/brigadier (Stoekproefcontrole)
Verschuivende volgorden zelfde arbeidsplaats	X			Analyse via Diversiteits planning (4th project)
Afwijken afgeproken planning	X			Dagelijkse stilstandmeeting (per bedrijf)
Overgenomen werken (found work)	X			Back up centrale werkplaats
Verschuivende eenheden zelfde periode stil	X			Algemene organisatie verbod SI/SI
Energie (black out)	X			Geen melding
Westeromstandigheden	X			maar: mogelijk heel, wind
Andere:	X			

Handtekening Stilstandsverantwoordelijken: [Handwritten signatures]

Datum: 17/11/2020

Werkblad voor doorvoering van een Risicoanalyse (Task Risk Analysis of Job Safety Analysis)

Risico	Impact	Risico	Waarom onvoldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende	Waarom niet voldoende
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

**Bijlage 4: Analyse: Welke Werkzaamheden worden uit de HKCS-stilstand uitgehald tgv COVID**

Deelnemers: GS, JB, JM, CC, LVG, GI, FD, JK

Datum: 27-4-2020

Resultaten:

Stilstand (S):

Werkzaamheden uit de stilstand gesloten:

- 242
- 242
- 522 na de stilstand
- Zeventienvijf isolatieverkeersbussen naar de week achter de stilstand te schuiven. (afstemming Jas Heuzem en Gert Jacobs)
- Inden mogelijk ook af te lossen voor de stilstand (afstemming Jan Aelwazen en Gert Jacobs)

Week 1:

- Vrijgave van verdampers in Oerlespak en aderlicht → Geen probleem.
- Reuflagen steeds met 1-3 personen → "Social Distancing" geen probleem.
  - o Isolatie van isolatieverkeersbussen en verdampers druk en temperatuur noodnaders voorzien worden door contractoren.
- TCS-werkzaamheden aan beëindiging
  - o Aderbescherming verder geen werkzaamheden in de buurt.

Week 2:

- Verliesverloof
  - o gebund door bevestiging op te delen en hier dan verliesverloof per verlost.
  - o Mogelijk problemen bij "Social Distancing" indien geen gasmasker voor product nodig dan masker medelagen (Herb).
- 951:
  - o Mogelijk problemen bij "Social Distancing" indien geen gasmasker voor product nodig dan masker medelagen.
- Werkzaamheden Stroom:
  - o Geen social distancing problemen andere kant van productiegebouw
- Werkzaamheden Isolatie:
  - o Geen social distancing problemen in het gebouw/Tankpark geen verdere medewerkers.
  - o Gasmasker geen probleem.

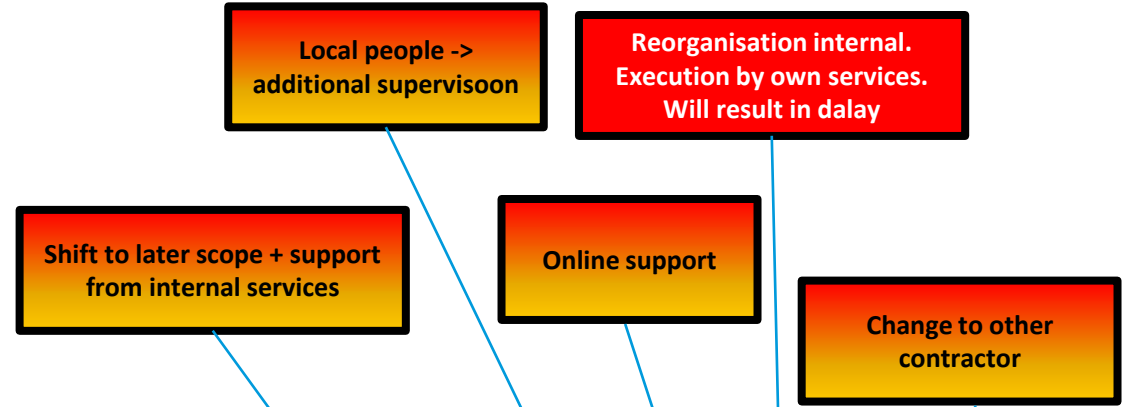
## CONTRACTOR RISK ASSESSMENT

Define countermeasures in case red or orange

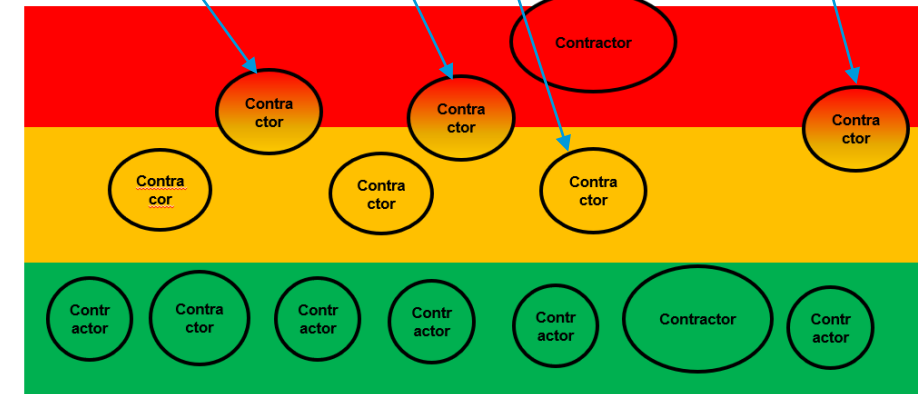
Know contractor and find out employee roots



Discipline	Contractor	# persons	Foreign Employees	Employees already activ on site	Back up plan possible	Risk profile
Piping	Contractor	480	Risk estimation	X If yes, low risk 1 = low risk 5 = high risk	X If yes, low risk =	Risk Value
Maintenance works	Contractor	260				
Cleaning	Contractor	55				
Machinerevision	Contractor	100				
Scaffolding	Contractor	125				
Isolation	Contractor	100				
Valve revision	Contractor	80				
Catalist exchange	Contractor	80				
Cranes + Riggers	Contractor	90				
Safety company	Contractor	80				
Chemical cleaning	Contractor	10				
Painting	Contractor	20				
E&I	Contractor	40				
Rope access	Contractor	5				
Analyse koeltechniek	Contractor	4				
Manual cleaning	Contractor	10				
Cleaning containers	Contractor	15				
Inspection	Contractor	5				



Visualisation Contractor risk profile



Define contractor follow up steps depending on the risk profile

Working with frame contractors is preferable

## FOLLOW UP CORONA MEASURES

### Corona coach

- Helps / control the employees
- Rules needs to be clear and unambiguously
- Needs sufficient support from management

### Management

- Visual leadership in the field is necessary
- Define rules
- Reward positive behaviour



No exceptions for own people

## LIMITED CONCENTRATION/MIXING OF PEOPLE

To reduce the contacts, following can be considered

- Working in early /late /night shift
- Different startup times to avoid concentration in changing rooms, Permit center,....
- Different lunch times and pauze time
- Define max number of contractors in the field
- Working in isolated groups ( no mixing of teams ).
- Dedicated fire watches to welders - inspection teams
- Adjust planning to spread work to area/floor
- Reduced amount of people to pick up permits, to have access to the warehouse and the safety shop.
- Avoid visitors
- Open air meetings
- Make use of remote experts

Good practice Sibur: visualisation of non shift workers by jackets and colored helmets



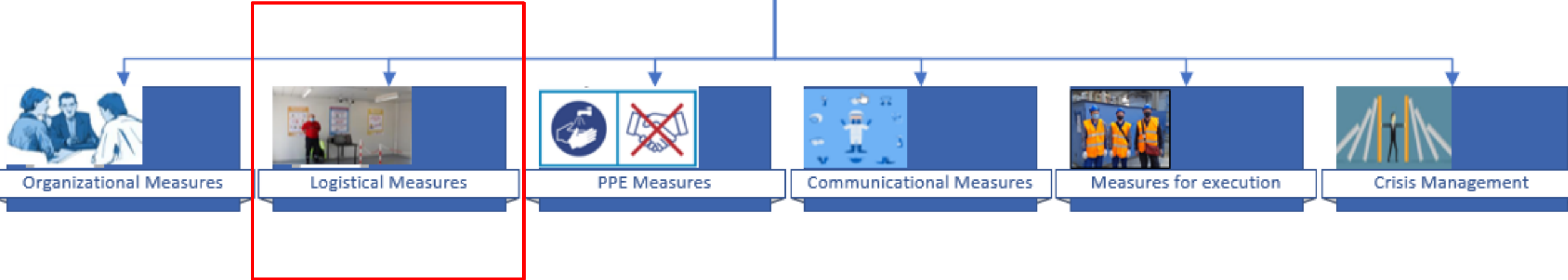


## INTEGRATION OF MEDICAL DEPARTMENT

- Setup approach in case of infection. In case of an infection, the medical department is in the lead to set up next steps
- Setup approach in case of risky contact and quarantine measures
  - Clear workflow to be developed with TAR-keyplayers / medical department and contractor involved
- Define type of disinfection products to avoid skin rash
- Supports to have clear communication in order to avoid fear at the employees
- Use of “tracing app”

## CONTRACTOR MANAGEMENT

- Stay in contact with the contractor on regular base to check availability/risks:
  - Frame contracts by discipline responsible
  - Project/TAR contracts by construction/TAR manager
- Setup Covid charter with the contractor
- Covid plan as annex to HSE plan
- Discuss contractor housing situation during TAR execution
  - Hotel / renting of apartments...
  - Focus on people density and safety distances



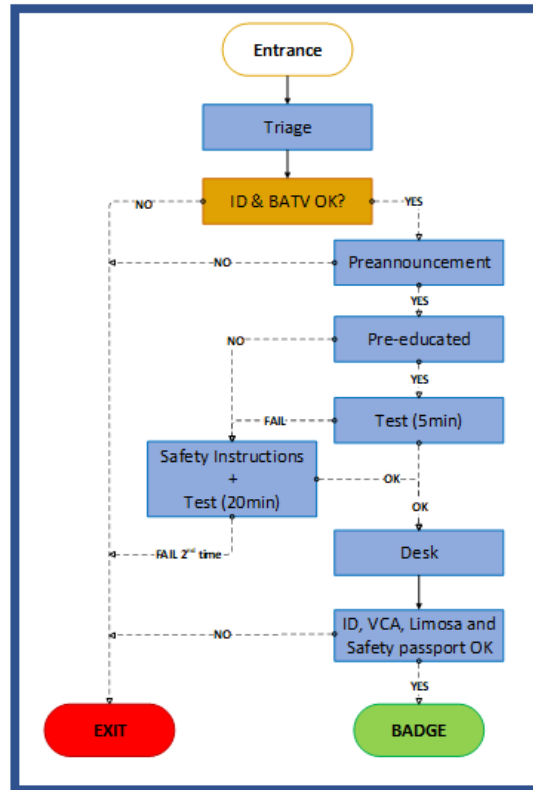
## CREATE A LOGISTICAL APPROACH

Items to be considered :

- Site Access of contractors and service engineers
- Use of transportation on site and to the site
- Avoid crossing & mixing employees at shared locations
- Expand site (temporary) facilities
- Common tools and parts
- Hygienic devices



## Contractor On Site



### DOCUMENTS NEEDED

- ID & Passport
- Drivers license is not enough
- Preannouncement number
- Safety passport : incl. picture, company, VCA/SCC/MASE
- Copy Certificate (VCA...)
- Limosa if needed ([www.limosa.be](http://www.limosa.be))
- Correct company information on Limosa-documents



### GATE

- > Gate 6: All Contractors & Trucks



### TIME SAVING

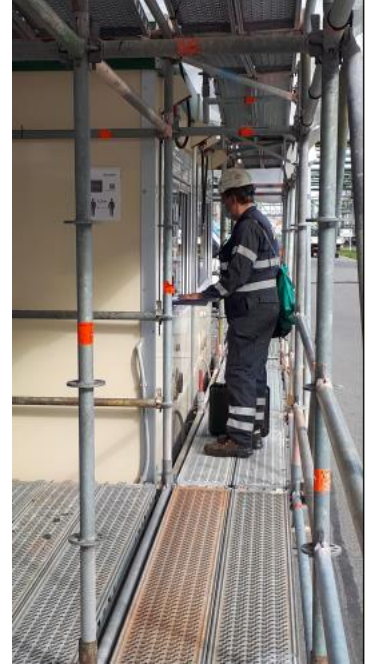
- Preannouncement in [Pass@ge](mailto:Pass@ge)
- Pre-educated
- Make appointment (groups)
- Come all at once
- Come Late for appointment



### TRANSPORT

- > Dedicated parkingspaces (Both Sides of Scheldelaan)
- > Organise internal transport









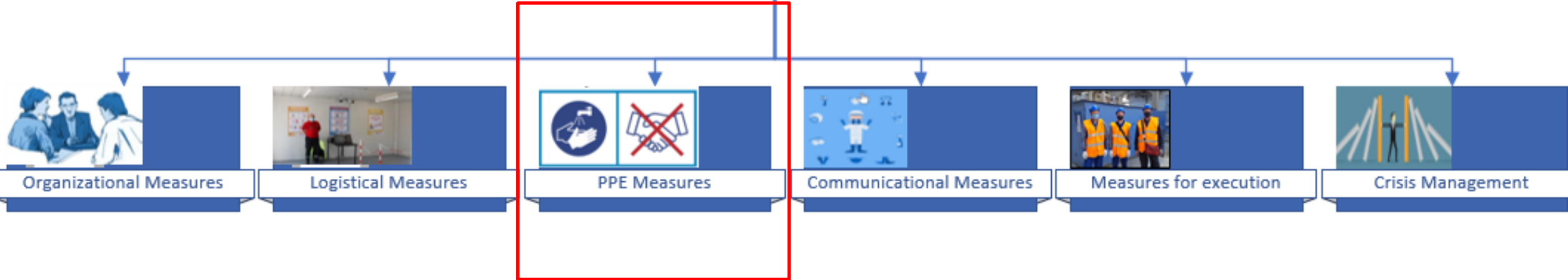
## TEMPORARY SITE FACILITIES

- One way gangways if possible
- Coffee locket instead of corner to avoid accumulation of people
- Increased smoking area: Enforce limited amount of people → Like e.g. one smoker per table
- Plexi wall at permit counter/ preferable separate permit container ( avoid traffic in control room )
- Bigger meeting rooms: reduced people amount in room
- Lunchroom setup with respect to social distance / lunchboxes / Tents
- Additional sanitary facilities ( handwash / toilets )
- Description of max number of people allowed per room
- Aeration of rooms
- No use of aircon
- Open drinking container
- Setup a strict and enhanced cleaning plan
- Separate closet for clean and working clothes
- Availability of lunch boxes instead of use of the canteen
- Difficult to get temporary facilities due to very high demand -> order well in advance











## MASKS / GLOVES

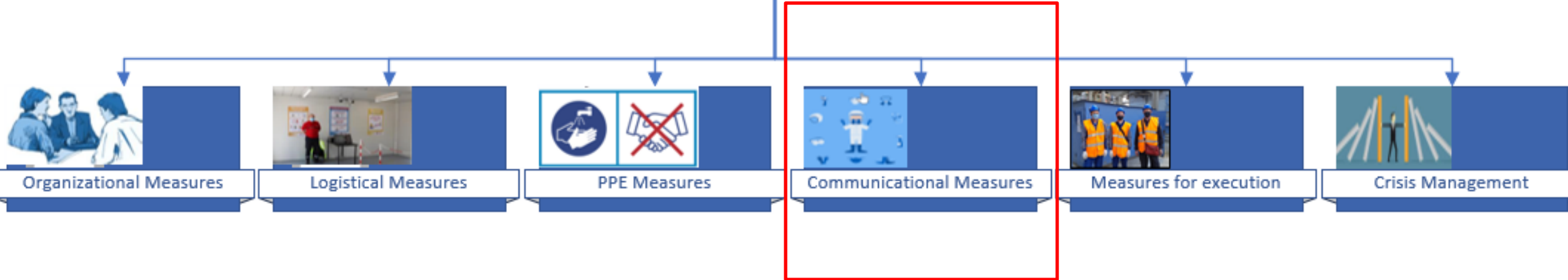
- Masks or face shields mandatory and individual
- Admission for the use of faceshield is depending from company
- Gloves mandatory in the installation to avoid contact contamination
- Contractors bring their PPE's nevertheless it's good to have sufficient stock

## FACIAL HAIRSTYLES

- Consider complaints in regard to “discrimination”







## CREATE A COMMUNICATION STRATEGY

Items to be considered :

- Contractor communication
  - Off site
  - On Site
  - Online
  - Personally
- Training & Toolbox
- Meetings
- Start Work communication
- Short notice changes communication

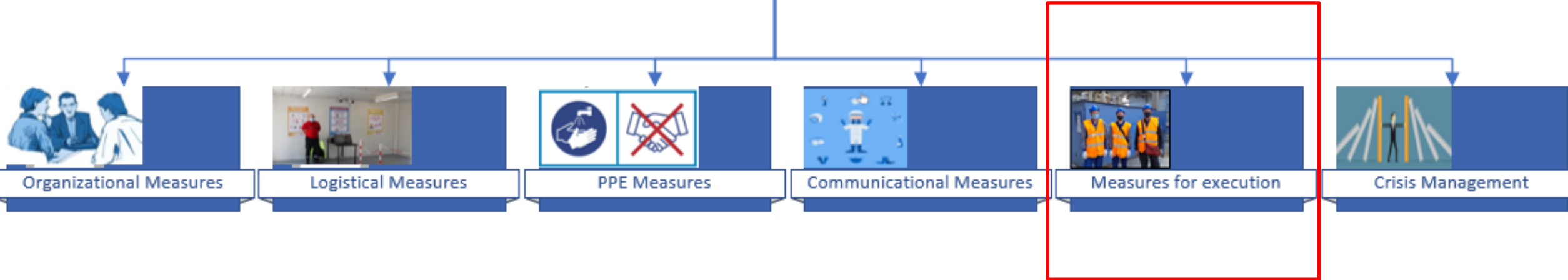
## TOOLBOX - VISUALISATION

- Prepare specific Corona toolbox in advance
- Include Corona instructions in toolbox + stimulating messages
- Visualisation of Covid measures via posters, banners, signs, TV screens,...



## MEETINGS

- Avoid meetings with many participants in limited space:
  - Wear facemasks
  - Keep social distance
  - Invite only necessary people
  - Duration not longer as necessary
- Skype /Team meetings (e.g., with specialists)





## CONDITION CHECK

To take in consideration:

- Temperature check at the gate
- Temperature check at the Turnaround
- Covid tests ( daily in Russia )
- Covid tests for foreign people ( 3 times during 14d quarantaine before start work )
- Contractors check their own employees for Covid symptoms and gives feedback on daily base
- Check “legal” approval



**VIDEO SUPPORT**

Use of augmented reality



# Solution 1: Real Time Support

1 Technician Location A



3 Expert Location B



2 Video stream

4 Annotate on screen

or

Use virtual hands



5 Augmented video stream



6 Realtime remote support

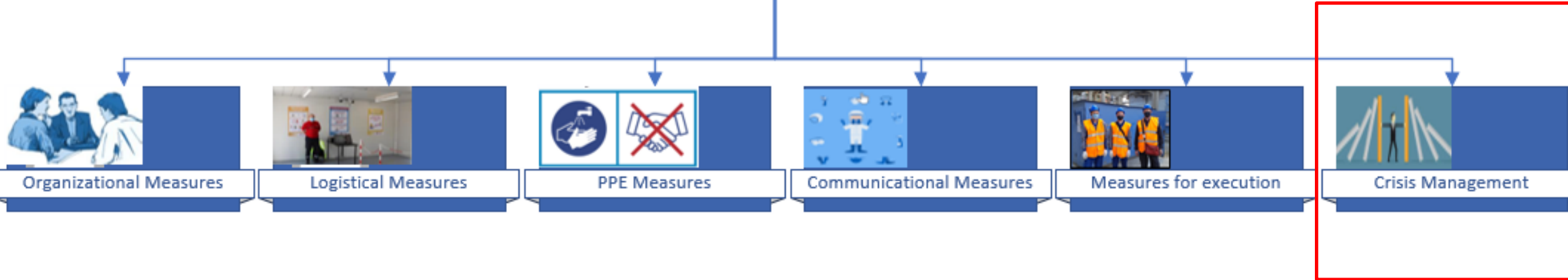
- Realtime support
- Extra pair of remote eyes and virtual hands in the scene
- Extra augmented information

## SPECIFIC CORONA LMRA

- Integrate corona in existing LMRA
- Setup a specific CORONA LMRA
  - Safety distance
  - PPE
  - Disinfection
  - ...

### Example working in confined spaces:

- Limited amount of people
- Workers should use personal protective equipment to reduce their exposure to COVID
- Employers and workers will need to be more cautious about social distancing, using PPE and performing housekeeping inside confined spaces.
- Consider Health assessments (temp measurement, check for symptoms) on workers before they can enter a confined space. (if legally allowed)





## EXPECT THE UNEXPECTED



## GENERAL EMERGENCY DRILL IS NOT GENERAL ANYMORE

- Check size of the assembly location in regard to the number of people
- Visualize assembly location
- Defines rolls and responsibilities
- Provide sufficient spare facemasks
- Avoid test alarms

## CORONA CASE PROTOCOL

- Set up action plan in case of an infection / close contact
- Check Insurance agreements between contractors to support each other in case something goes wrong in case

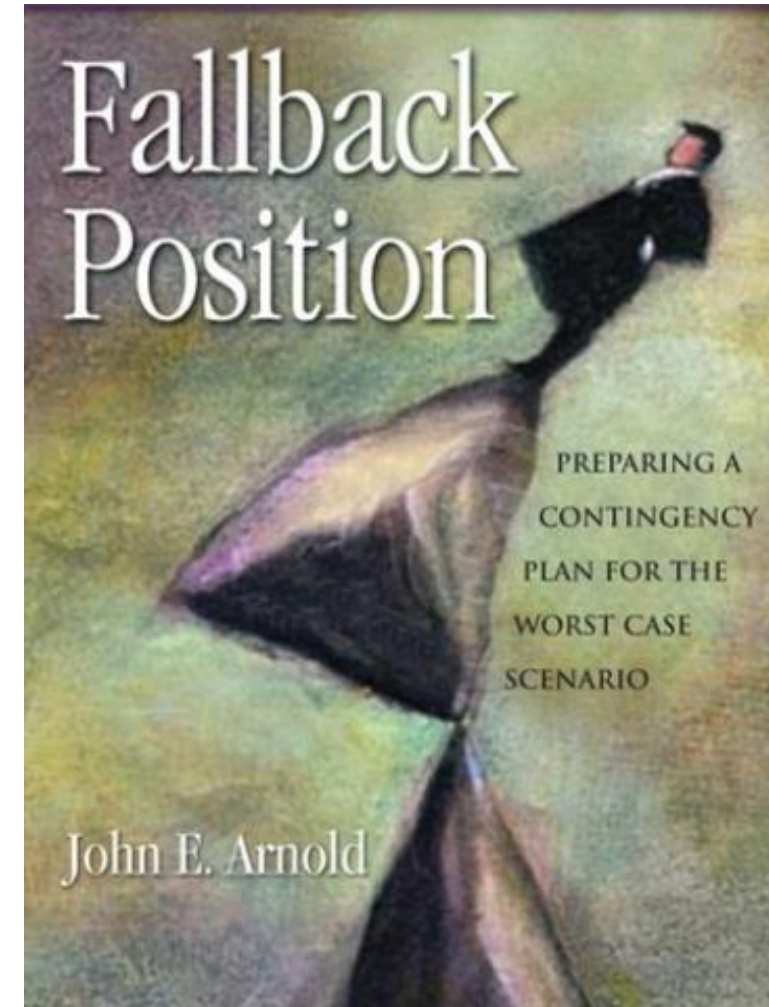


## FALLBACK POSITION OF CRITICAL FUNCTIONS / DEPARTMENTS

- Prepare a contingency plan for the worst case

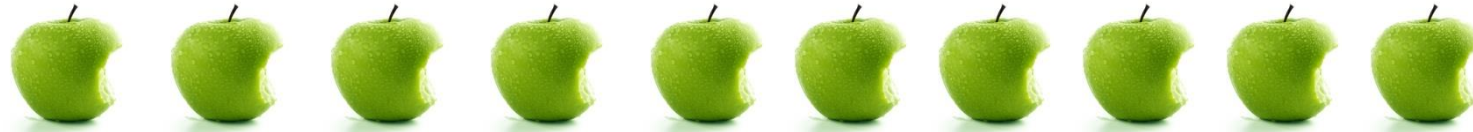
A more detailed fallback scenario needs to be set up in case of absence of a colleagues due to COVID risks

- In case of several Turnarounds in parallel
  - check availability of critical departments like Rotating Workshop, Material Specialist, Automation...





## WRAP UP



If you have an apple and I have an apple and we exchange these apples then you and I will still each have one apple.

But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas.

## **George Bernard Shaw**

(Irish literary Critic, Playwright and Essayist. 1925 Nobel Prize for Literature, 1856-1950)