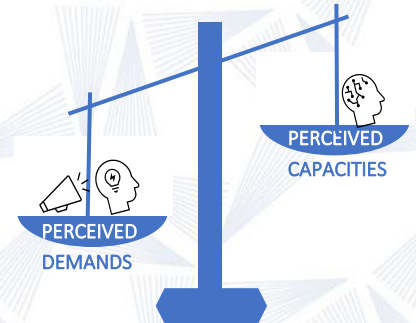


## SCIENTIFIC MODEL by VUA – SHORT SUMMARY

### A CONCEPTUAL HUMAN FACTORS MODEL OF DECISION MAKING AND ACTING (DMA) UNDERLYING THE SHOTPROS VR TRAINING SOLUTION

#### IMBALANCE

People perceive a situation as stressful if it is appraised as **threatening** to their well-being and they perceive **limitations in control** or in the ability to cope with it. The perceived *demands* and the perceived *capabilities* for the situation are **imbalanced**. How you perceive the situation, is influenced by different **human factors**. Human factors can be **personal, contextual, organisational, or societal**. Depending on your individual perception.



#### INFLUENCED BY HUMAN FACTORS

#### STRESS

**STRESS IN THE SHOTPROS CONTEXT IS CONSEQUENTLY THE INDIVIDUAL EMOTIONAL RESPONSE OF A POLICE OFFICER TO A STRESSFUL EVENT THAT FEELS THREATENING.**

#### CHANGE IN ATTENTION

When this situation of imbalance occurs to a police officer and cannot be mitigated, he starts perceiving more **task-irrelevant input** instead of the task-relevant input. This represents a change in **attention** and leads to suboptimal DMA. **Decision making and acting** is not a sequence but typically happens **together**. Embodied choices and motor-heuristics are considered as simple rules of thumb during DMA to choose between behavioral options (for example use of force behaviour, de-escalating behaviour, running away, etc.). Both **cognitive and bodily** (sensory and motor) **information is used simultaneously**: If, for example, you want to pass through a door but have a large box in your hand, you intuitively will open the door with your elbow – you do not start thinking about it, you just do it like this.

#### VR TRAINING

For SHOTPROS, this model forms the basis of **VR training** – the human factors help to create realistic VR-training where different situations and variations are provided for the trainees. By this, police officers can train to **restore or retain their attentional processes** in any stressful situation and learn to remain focused on the task-relevant inputs and stay in control.

#### MANIPULATE CONTEXT & LEARN TO FOCUS ON TASK RELEVANT INPUT

In VR you can **manipulate** the **sensory** (e.g.: noise) and the **cognitive** (e.g.: dispatcher information) **input** by just a few clicks. If VR trainings can be individualised for each trainee, DMA will be enhanced, which will lead to **better and more correct decisions** in real life. Consequently, this training does not necessarily make police officers less stressed or prepares them for all possibly occurring situations, **but it enables them to focus on task-relevant input in stressful situations**, instead of being distracted by task-irrelevant matters.