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Video Quality in Public Safety: 4th Annual Homeland Security Defense and Education Summit, Georgetown University

Zoufal, Donald R.

Monterey, California: Naval Postgraduate School

http://hdl.handle.net/10945/69218

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Video Quality in Public Safety

4th Annual Homeland Security Defense and Education Summit, Georgetown University

February 25, 2010

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Outline

- VQiPS Purpose
- VQiPS User Guide Audience
- VQiPS Methodology
- Use Cases/Classes
- Video System Components
- Developing Specifications
- Support/Participation

VQiPS Purpose

VQiPS was established by the U.S Dept. of Homeland Security/Science and Technology Directorate to help public safety agencies assess user needs for video and relate them to technical performance specifications and standards. The VQiPS Project is organized to create a document which will enable users to successfully purchase a video system, or parts of a video system,

that provide the required level of video quality.

VQiPS User Guide Audience

The user guide is written for public safety organizations that intend to procure video systems, regardless of organization size, system size, or specific video application. The document does not assume that the reader is a video expert, but does assume that the reader has at least some understanding of how the video system will be used once it has been purchased.

VQiPS Methodology

VQiPS is a *partnership* between:

- **U.S. Department of Homeland Security/Science and Technology, Office for Interoperability and Compatibility**
- **U.S. Department of Commerce, Public Safety Communications Research Program**

VQiPS Working Group as an interdisciplinary *collaborative forum* including:

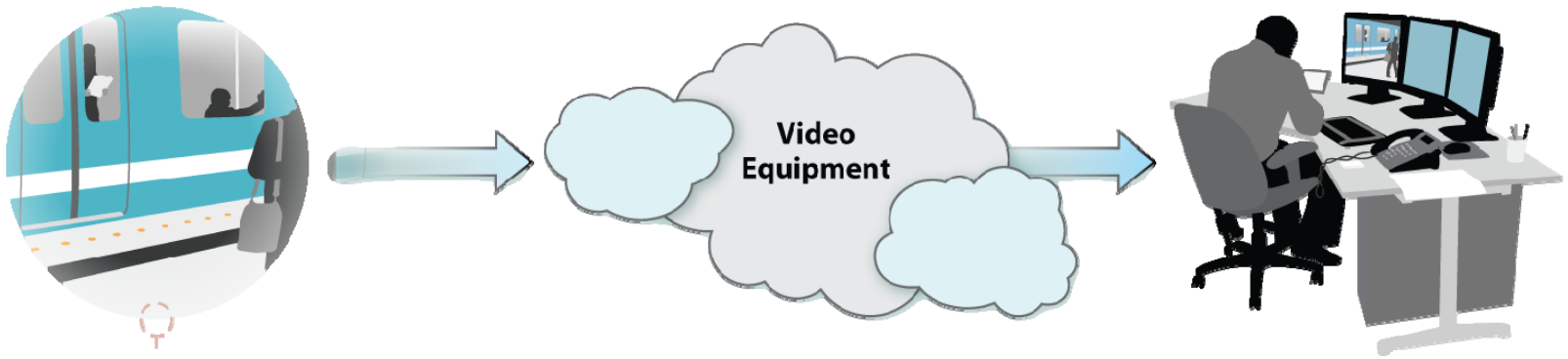
- **First Responders-Police, Fire, EMS**
- **Other public safety partners-transit, public works**
- **Academia**
- **Private Sector**

Use Cases/Classes

The answers to these two questions define the *use case*.

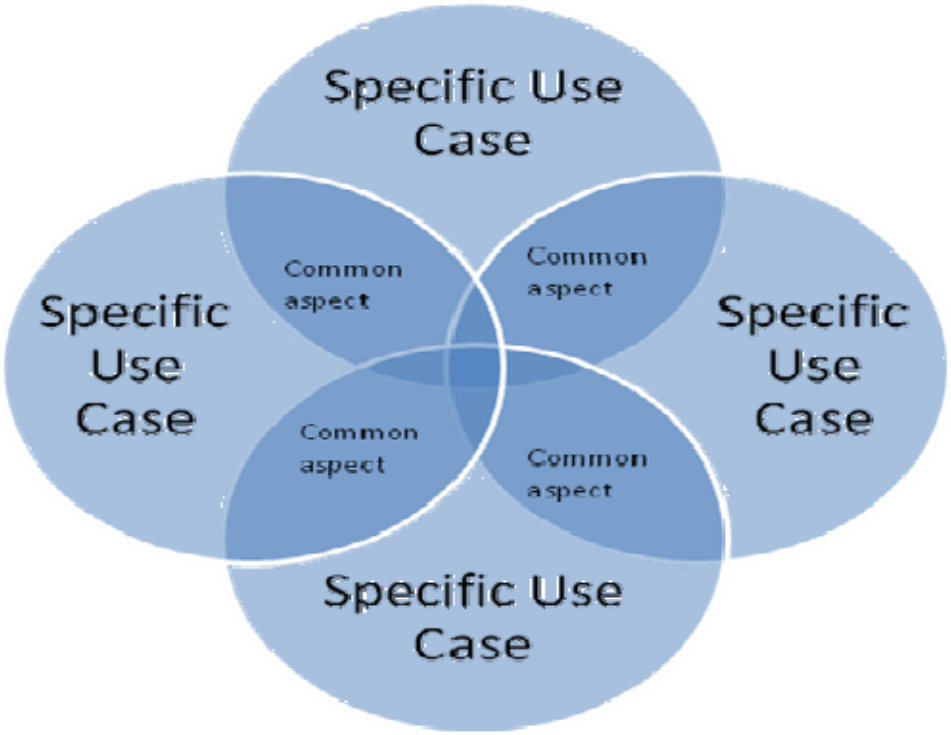
- What is in the scene of interest, or scene content?
- What is the desired task to be accomplished from viewing that scene?

Use Cases/Classes



What do you need to see? With what degree of clarity?

USE Cases/Classes



Multiple Use Cases Have Aspects in Common

Use Cases/Classes

Five Generalized Use Class Aspects that impact the quality of the video content as seen and used by the end user:

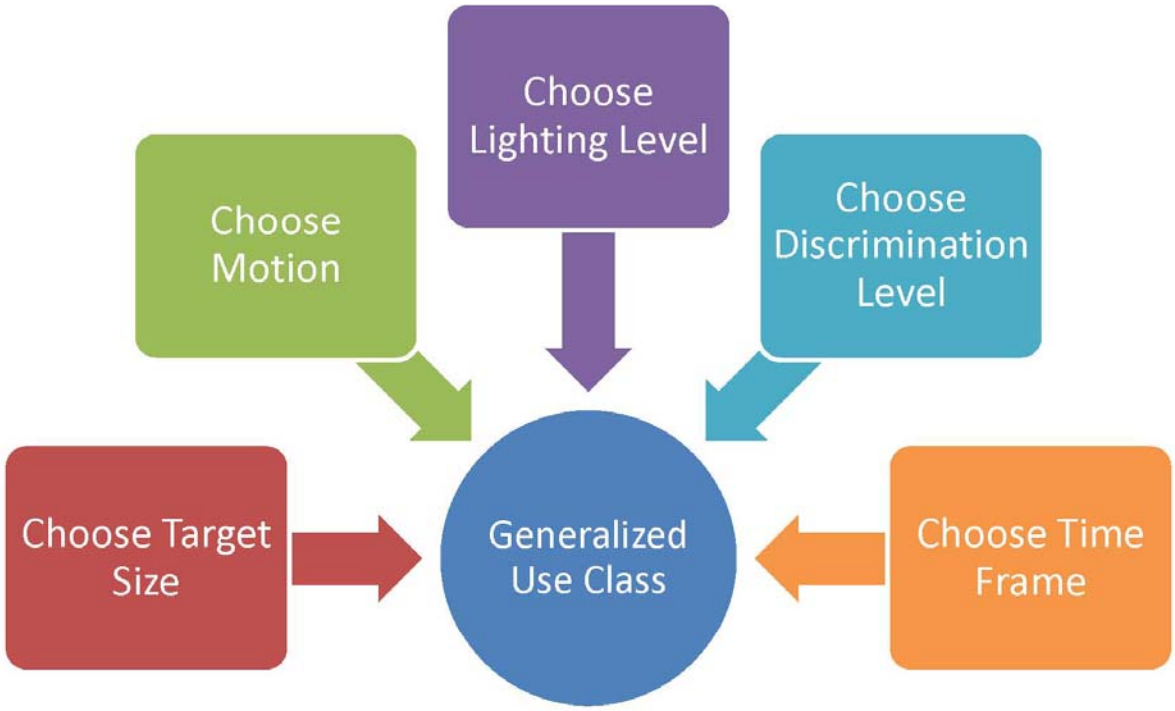
Use Characteristics

- Discrimination Level
- Usage Timeframe

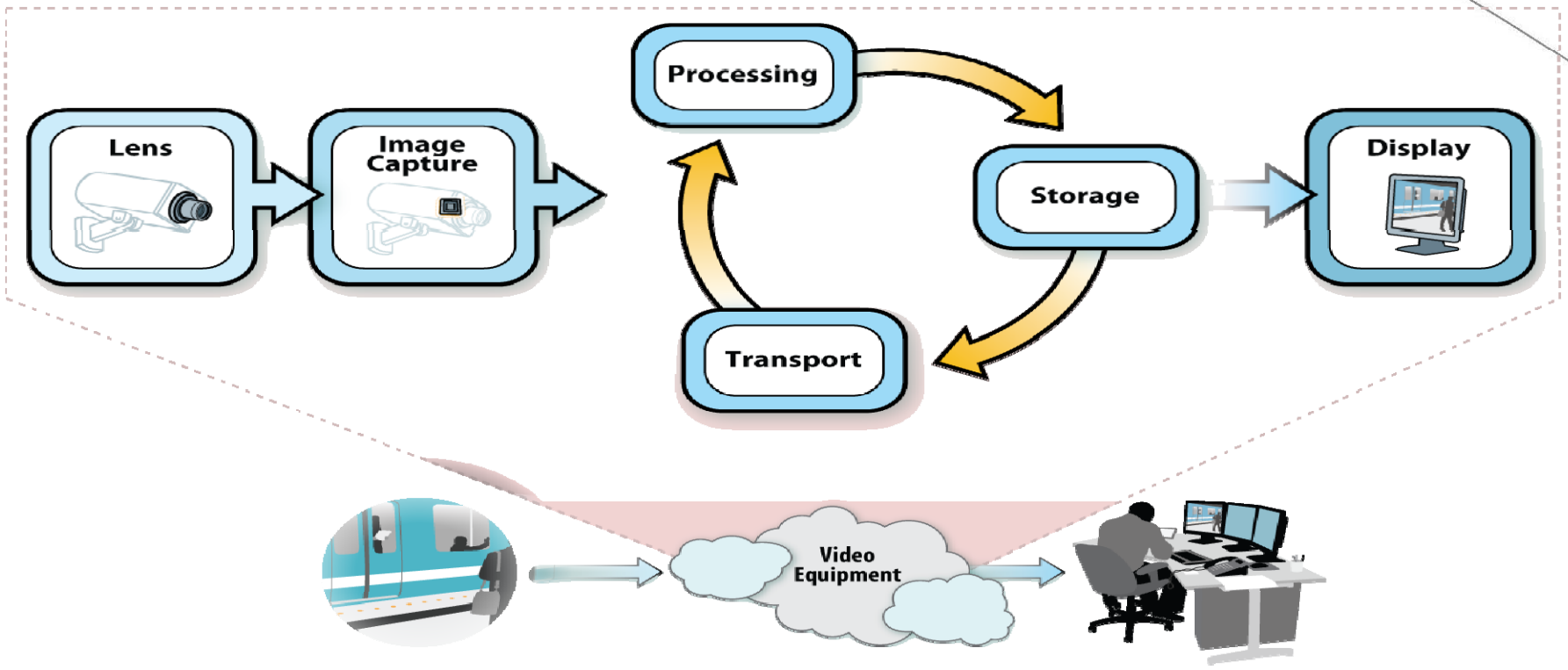
Scene Content

- Target Size
- Motion
- Lighting Level

USE Cases/Classes

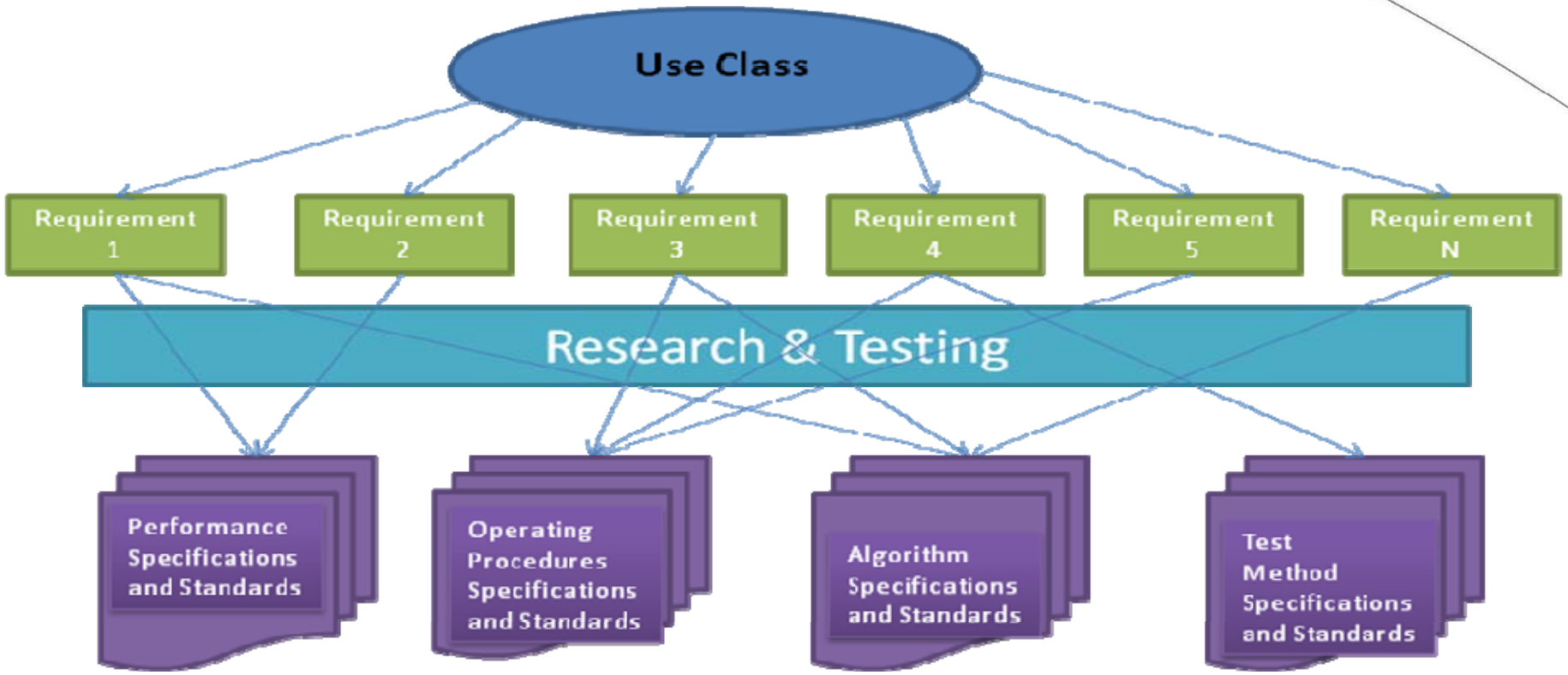


Video System Components



Core Video System Components

Developing Specifications



Each Use Class implies a set of requirements that will optimize success of the target recognition task. Each requirement drives a set of specifications and standards needed to fulfill certain aspects of the requirement.

Support/Participation

- VQiPS Working Group http://www.safecomprogram.gov/NR/rdonlyres/40B26C9A-9DAC-4C8E-96AD-09F4846073B8/0/VideoQualityFactSheet16Jun09.pdf

- Consumer Digital Video Library http://www.cdvl.org/

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Thank you!

Don Zoufal

Adjunct Professor, Lewis University

Safety & Security Executive, Systems Development integration, LLC

dzoufal@sdienterprises.com

John Contestabile

Assistant Program Manager/Homeland Protection

Johns Hopkins University, Applied Physics Lab

john.contestabile@jhuapl.edu