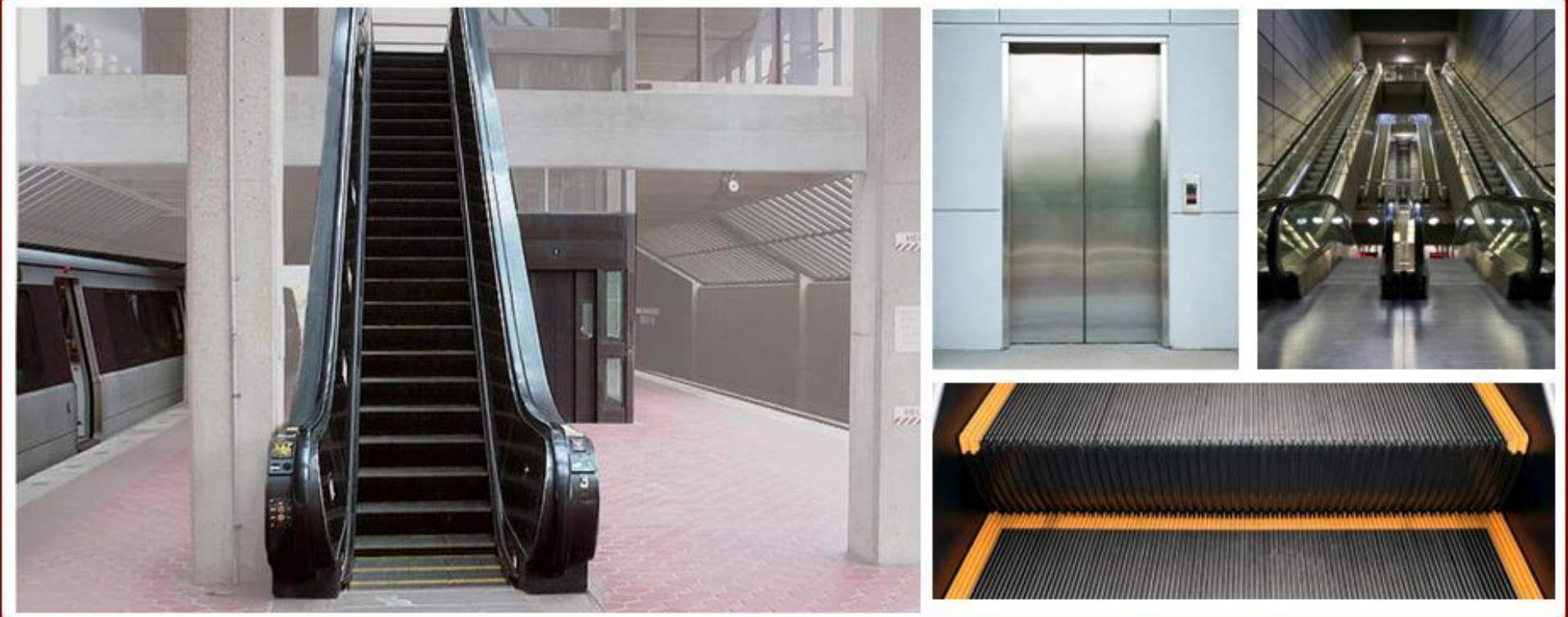


Instructor/Participant Guide



212: Escalator-Inspection & Basic Maintenance

Module 12: Internal Communications



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Icons Used in This Guide

Throughout the Instructor’s Guide, the following icons indicate the type of content being presented.

	Refer To		PowerPoint
	Multimedia		Web based Training
	Write		Ask
	Individual Activity		Small Group Activity
	Classroom Activity		Duration

Agenda

Topic No.	Topic Title	Duration
1	Introduction	5 minutes
2	Glossary of Local Terms and Language	15 minutes
3	Reporting requirements and Forms	15 minutes
4	Communication Procedures	15 minutes
	Communication Interface	15 minutes
	Reporting Software	15 minutes
5	Summary	5 minutes
Total Time:		1.4 hours



Overview

Purpose

The purpose of this module is to:

- Introduce the participant to the types and styles of vertical transportation commonly found in U.S. transit systems.

Objectives

At the end of this chapter, the learner will be able to:

- Describe the method of remote monitoring used within their system
- Identify who monitors the system
- List advantages of remote monitoring

Materials

Make sure you have the following:

- Laptop (one for leader)
- Participant Guides
- PowerPoint slide deck
- LCD projector
- A17.1 Safety Code for Elevators and Escalators
- A17.2 Guide for Inspection of Elevators, Escalators and Moving Sidewalks
- A17.3 Safety Code for Existing Elevators and Escalators
- Heavy Duty Transportation System Escalator Design Guidelines (APTA RT-RP-FS 007-02)
- Field Employees' Safety Handbook
- Transit Agency Handbook

Preparation

PREPARE flip charts with the following titles:


- Class Expectations



Instructor's Notes

Introduction


Internal Communications




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Slide 1

GAIN audience attention by introducing yourself.

 **WELCOME** the participants to the internal communications module.

 **ASK** how does the computer communicate with the escalator?

DIRECT participants to the objectives on slide 2.

 **REVIEW** the objectives on Slide 2.

Internal Communications

Outline

- Describe the method of remote monitoring used within their system
- Identify who monitors the system
- List advantages of remote monitoring

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Slide 2

Welcome to the internal communications module.

How does the computer communicate with the escalator?



Instructor's Notes


Internal Communications


Introduction

- Purpose of the remote monitoring system is to collect information from the escalators and elevators in the transit agency's stations.
- The main advantage of the remote monitoring system is the information shows the time and date of changes in the condition of the escalators and elevators.

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Slide 3

 **REVIEW** general overview of the remote monitoring system.

 **ASK** what purpose does the remote monitoring system serve?

General Overview

What purpose does the remote monitoring system serve?



Instructor's Notes


Internal Communications


Local Terms and Language

- **Convertor** - a device that converts data.
- **Device Gate** - an electronic logic gate made up of a single integrated circuit or a combination of circuits.
- **DeviceNet Module** - an electronic module that connects devices for both input/output and explicit messages transmitted over a network.
- **Internet Protocol (IP)** - sends data between computers over the Internet while IP is the rule that handles the proper and actual delivery of the data.
- **Transmission Control Protocol (TCP)** - a set of rules which tracks the individual units of data.

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Slide 4

 **REVIEW** slide 4 and discuss some common terms and language within internal communications.

 **ASK:** participants to define the listed terms.

Local Terms and Language

Define the following terms:

Convertor

Device Gate

DeviceNet Module

Internet Protocol (IP)

Transmission Control Protocol (TCP)



Instructor's Notes

Reporting Requirements and Forms

Internal Communications

Reporting Requirements and Forms

- Each transit agency has its own reporting requirements and forms.
- All maintenance inspections, repairs, lubrications, and adjustments must be documented.
- Follow your agency's procedures.



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Slide 5



REVIEW slide 5 and discuss appropriate Transit Authority reporting requirements and forms.



ASK how do you determine if you must document your time on site?

How do you determine if you must document your time on site?



Instructor's Notes

Internal Communications

Communication Interface

- There is a connection to the escalator Programmable Logic Controller inside the escalator controller to a computer on site that can be a telephone cable, fiber optic cable, or small telephone wires 12-18 gauge.
- The computer on site sends the information via the Internet or Intranet to a computer server which stores and processes the information.

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Internal Communications

Communication Interface

Data Flow

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Slide 8

Slide 10



REVIEW slide 8 through 10 and discuss how the PLC is connected to the computers on site.



ASK: if an annunciator panel is not functioning properly, what must be completed?

Communication Interface

If an annunciator panel is not functioning properly, what must be completed?



Instructor's Notes


Internal Communications

Reporting Software

- Reporting software will vary from each transit agency depending on the particular type of remote monitoring system chosen by the agency.
- A few of the reports that may be available:
 - Worst performing vertical equipment
 - Best performing vertical equipment
 - Preventive Maintenance (PM) scheduled equipment
 - Completed PMs on schedule
 - Mechanic time on equipment
 - Type of safety devices activated and frequency
 - Number of accidents/vandalism on each vertical equipment
 - Ratio of up-time versus down-time


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Slide 11

 **REVIEW** slide 11 and discuss how to properly test the operation of steps.

CONTENT: Direct participants to describe in their own words the types of reports that are available to them.

APPLICATION FEEDBACK: now that we have discussed a little about reporting software, have the participants answer the following question.

 **ASK** what current software is being used by your system?

Reporting Software

What current software is being used by your system?



Instructor's Notes


Summary

Internal Communications


Summary

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Slide 12

 **REVIEW** slide 12 and summarize the module.

EVALUATION and CLOSURE: Recap the main points of the module before moving on to the next topic within this course.

 **ASK** the participants if they have any outstanding questions on what was presented.