



## Virtual Portal for Interaction and ICT Training for People with Disabilities

### Integrated ViPi Platform – ViPi Semantic Content Management (VSCM) Ontology

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## Version History table

Version no.	Date	Dates and comments
1.0	01-06-2012	Complete version that contains the description/documentation of the current version of the VSCM ontology

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## Glossary

**Superclass:** Parent classes in the hierarchy. Objects that belong to a class, automatically belong also to the superclasses.

**Subclass:** Child classes in the hierarchy. Objects that belong to a subclass do not necessarily belong to the first class.

**Used with:** The object property with which the class is used as first argument (domain).

**Property:** defines a relation between two objects of different type; relates objects of first class (domain) with objects of second class (range)

**Domain:** The first class of objects on which a property can be applied to associate them with a second class of objects.

**Ranges:** The second class of objects with which a property associates a first class of objects

**Some:** When a property is defined as being applied to *some* objects of a class, means that any number of objects can be instantiated with that property. Alternative is the *only one*.

**Superproperty:** each annotation property type can be classified under one of the common annotation property types.

**Individuals/Instances:** The actual objects that are described/annotated with the created ontology. These are usually references to the real objects (in case of physical objects) or even the objects themselves (in case of software or textual, etc objects)

## 1 Introduction

The VSCM ontology has been developed to be used directly by the ViPi Semantic Content Management (VSCM) plugin. The ontology aims at supporting the semantic annotation and discovery of the Learning Objects (LOs), as well as, the user profiles within the ViPi platform repository, thus allowing the exploitation of semantic relations among them and advancing the quality of the search experience within the LOs database. The LOs will be semantically tagged with the ontology, building triplets like the *[LO – is of type - video]* or *[LO – is compatible with impairment - hearing]*, etc. On the other hand, all users' profiles will be tagged with semantic tags like *[User1 – has impairment - hearing]*, *[User1 – prefers content of type – game]* for the individualized provision of search results.

The current version of the ontology consists of the following:

- 79 Classes
- 21 Object Properties
- 0 Data Properties
- 2 Annotation Properties
- 183 Individuals/Instances
- 5 Datatypes

The meaning of each of the constituent components is explained in the following:

**Class:** A concept that models and describes specific entities from the real world. For instance, the class “Devices” is used to describe all real-world items that can be characterized as devices. An ontology implements a hierarchy of such classes which further fine-tunes the representation of the real-world entities and concepts.

**Object Property:** A property that implements relations between instances of different classes. For instance, a specific learning object (LO) that is classified under the Class “LearningObjects” can be related to the “Web browsing”, a specific instance of the Class “ICTSkills”, through the property “addressesICTSkills”.

**Data Property:** Implements relations between instances of classes to common types of data, like “float number”. No such type of properties are currently used in the VSCM ontology

**Annotation Property:** Implements types of comments associated with components in the ontology. For instance, the annotation property “LithuanianTranslation” defines that each class/property/instance in the ontology can be annotated with a text and be interpreted as its Lithuanian translation.

**Individual/instance:** The actual objects that are described with the abstract ontology. For instance, the language “Greek” is an instance of the Class “Languages”. The selection of instances forms part of the knowledge base of the ontology.

**Datatype:** a class of objects from which the data properties take value. For instance, the type “string” defines the common category of objects that comprise a string of characters. These components are





provided as default and are not defined by the VSCM ontology, therefore will not be detailed in the following.

The rest of this document provides a detailed documentation of the VSCM ontology, with listing of all components/objects and relevant explanations.

## 2 The VSCM ontology structure and content

You may access the current version of the ontology at the address:  
<http://eurocyinnovations.com/neologism/vscm> .

### 2.1 Classes

#### 2.1.1 VSCM\_Root

This is the root concept of the VSCM ontology, that serves as the parent of all other classes created.

**Subclasses:** vscm:UserProfile, vscm:PaymentMethods, vscm:Language, vscm:ImpairmentType, vscm:ICTSkills, vscm:ContentType, vscm:ContentEntity, vscm:AssistiveDevice, vscm:AgeGroups, vscm:AccreditationTypes, vscm:AccessibilityLevels

**Individuals/Instances:**

#### 2.1.2 Class: vscm>AboutComputers

A concept that models all entities that are associated with the section “About computers” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Individuals/Instances:** ComputerOnOff, LogInOut, PartsOfComputer, PartsOfComputerAssistiveTechnology

#### 2.1.3 Class: vscm:AccessibilityLevels

A concept that models any kind of accessibility levels. The objective is to be able to define which accessibility level is supported by each content entity (e.g. Learning Object).

**Used with:** vscm:hasAccessibilityLevel

**Superclass:** vscm:VSCM\_Root

**Individuals/Instances:** WGAC2.0, ...

#### 2.1.4 Class: vscm:AccreditationTypes

A concept that models any kind of accreditation types. The objective is to be able to define whether a content entity (e.g. Learning Object) is associated with an accreditation type.

**Used with:** vscm:hasAccreditationType

**Superclass:** vscm:VSCM\_Root

**Individuals/Instances:** ECDL, ...

## 2.1.5 Class: vscm:AdjustableDevice

A concept that models an adjustable device which can be used by a user.

**Superclass:** vscm:AssistiveDevice

**Individuals/Instances:** not yet applicable

## 2.1.6 Class: vscm:AgeGroups

A concept that models all age groups identified as required by the ViPi project, to categorise the users and constraint access to content.

**Used with:** vscm:suitableForAgeGroup, vscm:registersForAgeGroup

**Superclass:** vscm:VSCM\_Root

**Individuals/Instances:** adult(18+), teenage(10-16), child(0-10)

## 2.1.7 Class: vscm:AssistiveDevice

A concept that models a device which can be used by the end-users in accessing the platform's Content Entities. The members of this class are further classified in sub-classes, to carry additional semantic information.

**Used with:** vscm:usesDevices, vscm:specializesWithDevices, vscm:isCompatibleWithDevice

**Superclasses:** vscm:AssistiveDevice, vscm:VSCM\_Root

**Subclasses:**

vscm:DeviceTelephone, vscm:DeviceInternetApplication, vscm:DeviceInternet, vscm:DeviceForPsychologicalImp, vscm:DeviceForPhysiologicalImp, vscm:DeviceForCognitiveImp, vscm:DeviceAudioContact, vscm:AssistiveDevice, vscm:AdjustableDevice

**Individuals/Instances:** not yet applicable

## 2.1.8 Class: vscm:AssistiveHardware

A concept that describes all assistive technologies which are of type hardware.

**Superclass:** vscm:AssistiveTechnologies

**Individuals/Instances:** not yet applicable

## 2.1.9 Class: vscm:AssistiveSoftware

A concept that describes all assistive technologies which are of type software.

**Superclass:** vscm:AssistiveTechnologies

**Individuals/Instances:** UsingRefreshableBrailleDisplay, UsingScanningOnScreenKeyboard, UsingScreen, UsingScreenReaderMobile, UsingScreenReaderPC, UsingSpeech2Text, UsingText2Speech

## 2.1.10 Class: vscm:AssistiveTechnologies

A concept that describes the assistive technologies.

**Superclasses:** vscm:ICTSkills, vscm:OutputDevices

**Subclasses:** vscm:AssistiveSoftware, vscm:AssistiveHardware

**Individuals/Instances:** Magnifiers, Narrator, RefreshableBrailleDisplays, ScreenReaders, Text2Speech

## 2.1.11 Class: vscm:AvailableSoftware

A concept that models all content entities that can be associated with the section “AvailableSoftware” in the course “What is there for me” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:WhatIsThereForMe

**Individuals/Instances:** not yet applicable

## 2.1.12 Class: vscm:Belgium

A concept that models all content entities that can be associated with the section “Belgium” in the course “What is there for me” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:WhatIsThereForMe

**Individuals/Instances:** AssistiveTechnologyRelatedBel, BasicICTCompetenciesBel

## 2.1.13 Class: vscm:BrowsingTheWeb

A concept that models all learning objects that are associated with the section “Browsing the web” in the basic ICT skills’ curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Subclasses:** vscm:WebBrowsingApplications, vscm:WebBrowsingAndSecurity

**Individuals/Instances:** BrowserBasics, DownloadingFiles, FillingInForms, SecureWebUsage, SocialNetworking, UsingSearchEngine,UsingWebBrowser

## 2.1.14 Class: vscm:CollaborativeDocumentEditors

A concept that models the types of online applications that are of type collaborative document editors.

**Superclass:** vscm:OnlineApplications

**Individuals/Instances:** CMS, Wiki, Wordpress

## 2.1.15 Class: vscm:CommunicationImp

A concept that models the communication impairments

**Superclass:** vscm:ImpairmentType

**Individuals/Instances:** ReadingAbilityLimitation, SpeechAbilityLimitation, UnderstandingAbilityLimitation, WritingAbilityLimitation

## 2.1.16 Class: vscm:CommunicationSoftware

A concept that models the software that is used for communication.

**Superclass:** vscm:CommunicationTools

**Individuals/Instances:** FacebookChat, GooglePlus, GoogleTalk, MSNLiveMessenger, Skype

## 2.1.17 Class: vscm:CommunicationTools

A concept that models all learning objects that are associated with the section “Communication tools” in the basic ICT skills’ curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Subclass:** vscm:CommunicationSoftware

**Individuals/Instances:** SafeUseOfCommSoft, UsingCommunicationSoftware

## 2.1.18 Class: vscm:ContentEntity

A concept that models all types of content. The members are further classified into proper subclasses, of which the most important is the class Learning Object. However, there can be other content entities annotated within the ViPi platform, if so desired.

**Properties include:**

vscm:targetsUserGroup, vscm:requiresRegistration, vscm:isOfType, vscm:isCompatibleWithDevice, vscm:hasPaymentMethod, vscm:hasAccreditationType, vscm:hasAccessibilityLevel, vscm:costs

**Superclass:** vscm:VSCM\_Root

**Subclass:** vscm:LearningObject

**Individuals/Instances:** not yet applicable

## 2.1.19 Class: vscm:ContentProvider

A concept that models the users that will act as providers of content in the ViPi platform. Only users of type Trainer can be assigned this role.

**Superclass:** vscm:UserProfile

**Subclass:** vscm:Trainer

**Individuals/Instances:** not yet applicable

## 2.1.20 Class: vscm:ContentType

A concept that models the available types of information (e.g. audio, text, visual, etc.). Each Content Entity is associated with a specific type.

**Used with:** vscm:prefersContentType, vscm:isOfType

**Superclass:** vscm:VSCM\_Root

**Individuals/Instances:** Audio, Course, Game, InternetInfo, InternetService, MailingList, MessageBoard, Presentation, Text, Video, VisuallImage, WebsiteURL

### 2.1.21 Class: vscm:Cyprus

A concept that models all learning objects that are associated with the section “Cyprus” of the course “What is there for me” in the basic ICT skills’ curriculum of the ViPi project.

**Superclass:** vscm:WhatIsThereForMe

**Individuals/Instances:** EducationCY, GovernmentalCY, EmploymentCY, RepresentativePwDCY, OtherCY

### 2.1.22 Class: vscm:DeviceAudioContact

A concept that models an audio contact device used by people with disabilities.

**Superclass:** vscm:AssistiveDevice

**Subclasses:**

vscm:DeviceAudioContactForWheelchairUser, vscm:DeviceAudioContactForVisionImp, vscm:DeviceAudioContactForCommunicationImp

**Individuals/Instances:** not yet applicable

### 2.1.23 Class:

#### vscm:DeviceAudioContactForCommunicationImp

A concept that models the audio contact device that are specific for communication impairments.

**Superclass:** vscm:DeviceAudioContact

**Individuals/Instances:** not yet applicable

### 2.1.24 Class: vscm:DeviceAudioContactForVisionImp

A concept that models the audio contact device that are specific for vision impairments.

**Superclass:** vscm:DeviceAudioContact

**Individuals/Instances:** not yet applicable

### 2.1.25 Class: vscm:DeviceAudioContactForWheelchairUser

A concept that models the audio contact device that are specific for wheelchair users.

**Superclass:** vscm:DeviceAudioContact

**Individuals/Instances:** not yet applicable

### 2.1.26 Class: vscm:DeviceForCognitiveImp

A concept that models the devices specific for cognitive impairments.

**Superclass:** vscm:AssistiveDevice

**Individuals/Instances:** not yet applicable

### 2.1.27 Class: vscm:DeviceForPhysiologicalImp

A concept that models the devices specific for physiological impairments.

**Superclass:** vscm:AssistiveDevice

**Individuals/Instances:** not yet applicable

## 2.1.28 Class: vscm:DeviceForPsychologicalImp

A concept that models the devices specific for psychological impairments.

**Superclass:** vscm:AssistiveDevice

**Individuals/Instances:** not yet applicable

## 2.1.29 Class: vscm:DeviceInternet

A concept that models an Internet device used by people with disabilities. The members of this class are further classified in subclasses, specific for each impairment type.

**Superclass:** vscm:AssistiveDevice

**Subclasses:**

vscm:DeviceInternetForWheelchairUser, vscm:DeviceInternetForVisionImp, vscm:DeviceInternetForUpperLimbImp, vscm:DeviceInternetForUpperBodyImp, vscm:DeviceInternetForPhysiologicalImp, vscm:DeviceInternetForHearingImp

**Individuals/Instances:** not yet applicable

## 2.1.30 Class: vscm:DeviceInternetApplication

A concept that models an Internet application device used by a person with disabilities.

**Superclass:** vscm:AssistiveDevice

**Individuals/Instances:** not yet applicable

## 2.1.31 Class: vscm:DeviceInternetForHearingImp

A concept that models all devices that can be used by a person with a hearing impairment, to access the internet.

**Superclass:** vscm:DeviceInternet

**Individuals/Instances:** not yet applicable

## 2.1.32 Class: vscm:DeviceInternetForPhysiologicalImp

A concept that models all devices that can be used by a person with physiological impairment, to access the internet.

**Superclass:** vscm:DeviceInternet

**Individuals/Instances:** not yet applicable

## 2.1.33 Class: vscm:DeviceInternetForUpperBodyImp

A concept that models all devices that can be used by a person with impairment of the upper body, to access the internet.

**Superclass:** vscm:DeviceInternet

**Individuals/Instances:** not yet applicable

### 2.1.34 Class: vscm:DeviceInternetForUpperLimbImp

A concept that models all devices that can be used by a person with impairment on the upper limb, to access the internet.

**Superclass:** vscm:DeviceInternet

**Individuals/Instances:** not yet applicable

### 2.1.35 Class: vscm:DeviceInternetForVisionImp

A concept that models all devices that can be used by a person with vision impairment, to access the internet.

**Superclass:** vscm:DeviceInternet

**Individuals/Instances:** not yet applicable

### 2.1.36 Class: vscm:DeviceInternetForWheelchairUser

A concept that models all devices that can be used by a person on a wheelchair, to access the internet.

**Superclass:** vscm:DeviceInternet

**Individuals/Instances:** not yet applicable

### 2.1.37 Class: vscm:DeviceTelephone

A concept that models a telephone device used by people with disabilities.

**Superclass:** vscm:AssistiveDevice

**Individuals/Instances:** Android, Blackberry, Phone7, iPhone

### 2.1.38 Class: vscm:DocumentManagement

A concept that models all learning objects that are associated with the section “Document management” in the basic ICT Skills curriculum of the ViPi project

**Superclass:** vscm:ICTSkills

**Individuals/Instances:** MakingSavingDocumentLibreOffice, MakingSavingDocumentMSWord, , MakingSavingDocumentOnlineTools, UsingWordProcessingPackageLibreOffice, UsingWordProcessingPackageMS, UsingWordProcessingPackageOnlineTools

### 2.1.39 Class: vscm:Elearning

A concept that models the online applications that belong to the category of e-learning web applications.

**Superclass:** vscm:OnlineApplications

**Individuals/Instances:** ATutor, Blackboard, Moodle

### 2.1.40 Class: vscm:EmailAndSecurity

A concept that models all learning objects that are associated with the section “Email and security” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Individuals/Instances:** EmailSecurity, UsingEmail



### 2.1.41 Class: vscm:Europe

A concept that models all learning objects that are associated with the section “Europe” of the course “What is there for me” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:WhatIsThereForMe

**Individuals/Instances:** AssistiveTechnologyRelated

### 2.1.42 Class: vscm:Greece

A concept that models all learning objects that are associated with the section “Greece” of the course “What is there for me” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:WhatIsThereForMe

**Individuals/Instances:** not yet applicable

### 2.1.43 Class: vscm:HearingImp

A concept that models the hearing impairments.

**Superclass:** vscm:ImpairmentType

**Individuals/Instances:** MildHearingLimitation, SevereHearingLimitation

### 2.1.44 Class: vscm:ICTSkills

A concept that models the ICT Skills supported by the Learning Objects in the ViPi platform. Each Learning Object is annotated as associated with one or more ICT skills, to facilitate the semantic search. The ICT Skills are further classified in subclasses. An effort has been allocated to turn this concept as close to the ViPi curriculum as possible.

**Superclass:** vscm:VSCM\_Root

**Subclasses:**

vscm:WhatIsThereForMe, vscm:UsingComputer, vscm:SpreadsheetsManagement, vscm:SlideshowPresentationManagement, vscm:PracticalExercises, vscm:OutputDevices, vscm:OperatingSystems, vscm:OnlineApplications, vscm:MobilesSmartphonesTablets, vscm:InputDevices, vscm:EmailAndSecurity, vscm:DocumentManagement, vscm:CommunicationTools, vscm:BrowsingTheWeb, vscm:AssistiveTechnologies, vscm>AboutComputers

**Individuals/Instances:**

### 2.1.45 Class: vscm:ImpairmentType

A concept that models various limitations concerning the people with disabilities (e.g. light/moderate, severe, etc.). The members of this class are further classified into specific types of disabilities.

**Used with:** vscm:targetsUserGroup, vscm:specializesInimpairmentType, vscm:hasimpairmentType

**Superclass:** vscm:VSCM\_Root

**Subclasses:**

vscm:VisionImp, vscm:UpperLimblmp, vscm:MobilityLimitation, vscm:LearningDifficulties, vscm:HearingImp, vscm:CommunicationImp

**Individuals/Instances:** WheelchairUser

## 2.1.46 Class: vscm:InputDevices

A concept that models all learning objects that are associated with the section “Input devices” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Individuals/Instances:** Mouse/Touchpad, MouseAccessibility, MouseAccessibleAlternatives, Keyboard, KeyboardAccessibility, KeyboardAccessibleAlternatives

## 2.1.47 Class: vscm:Language

A concept that models the different languages supported by the ViPi platform and at which the content entities might be provided.

**Superclass:** vscm:VSCM\_Root

**Individuals/Instances:** Dutch, English, Greek, Lithuanian

## 2.1.48 Class: vscm:LearningDifficulties

A concept that models the learning difficulties as types of impairment.

**Superclass:** vscm:ImpairmentType

**Individuals/Instances:** AttentionDeficitIssues, InformationProcessingLimitation, LongTermMemoryLimitation, SpatialAbilityLimitation, WorkingMemoryLimitation

## 2.1.49 Class: vscm:LearningObject

This is the main content entity hosted by the ViPi platform. The members of this class will be the Learning Objects to be uploaded and annotated in the platform's repository.

**Properties include:** vscm:suitableForAgeGroup

**Superclass:** vscm:ContentEntity

**Individuals/Instances:** not yet applicable

## 2.1.50 Class: vscm:Lithuania

A concept that models all learning objects that are associated with the section “Lithuania” of the course “What is there for me” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:WhatIsThereForMe

**Individuals/Instances:** not yet applicable

## 2.1.51 Class: vscm:MobileDevices

A concept that models all entities that are of type mobile devices and are categorized under the broader class “MobilesSmartphonesTablets”.

**Superclass:** vscm:MobilesSmartphonesTablets

**Individuals/Instances:** Phones, Smartphones, Tablets

## 2.1.52 Class: vscm:MobilesSmartphonesTablets

A concept that models all learning objects that are associated with the section “Mobile smartphones and tablets” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Subclass:** vscm:MobileDevices

**Individuals/Instances:** AccessingInternetServices, AccessingViPiApplications, MobileApplications, MobileBasicOperation, MobileSecurity, MobileTypeAndroid, MobileTypeIPhone, MobileTypeJava, MobileTypeSymbian

## 2.1.53 Class: vscm:MobilityLimitation

A concept that models the mobility limitations as types of impairment.

**Superclass:** vscm:ImpairmentType

**Individuals/Instances:** UsesStickOrCrutches, UsesWheelchair, WalksUnaided

## 2.1.54 Class: vscm:OnlineApplications

A concept that models all learning objects that are associated with the section “Online applications” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Subclasses:** vscm:Elearning, vscm:CollaborativeDocumentEditors

**Individuals/Instances:** not yet applicable

## 2.1.55 Class: vscm:OperatingSystems

A concept that models all learning objects that are associated with the section “Operating systems” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Individuals/Instances:** Mac, Ubuntu, Vista, Win7, Win8, WindowsXP

## 2.1.56 Class: vscm:OutputDevices

A concept that models all learning objects that are associated with the section “Output devices” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Subclass:** vscm:AssistiveTechnologies

**Individuals/Instances:** ApplicationSettings, DisplaySettings, MonitorSettings, SoundSettings

## 2.1.57 Class: vscm:PaymentMethods

A concept that models the payment methods available within or outside the ViPi platform. Specific Learning Objects may be provided after payment, and accept specific payment methods.

**Used with:** vscm:prefersPaymentMethod, vscm:hasPaymentMethod

**Superclass:** vscm:VSCM\_Root

**Individuals/Instances:** Cash, CreditCard, Paypal

## 2.1.58 Class: vscm:PracticalExercises

A concept that models all learning objects that are associated with the section “Practical exercises” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Subclass:** vscm:UsingVIPIPortal

**Individuals/Instances:** InformationFinding, PurchasingOnline, UsingViPiGeneral

## 2.1.59 Class: vscm:SlideshowPresentationManagement

A concept that models all learning objects that are associated with the section “Slideshow presentation management” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Individuals/Instances:** UsingSlideShowPresentationPackageMS, UsingSlideshowPrsentationLibreOffice, UsingSlideshowPrsentationOnlineTools

## 2.1.60 Class: vscm:SpreadsheetsManagement

A concept that models all learning objects that are associated with the section “Spreadsheets management” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Individuals/Instances:** UsingSpreadSheetPackageLibreOffice, UsingSpreadSheetPackageOnlineTools, UsingSpreadsheetPackageMS

## 2.1.61 Class: vscm:Trainee

A concept that models the users that will act with the role of a trainee in the ViPi platform.

**Properties include:** vscm:registersForAgeGroup

**Superclass:** vscm:UserProfile

**Individuals/Instances:** not yet applicable

## 2.1.62 Class: vscm:Trainer

A concept that models the users that will act with the role of a trainer in the ViPi platform.

**Superclass:** vscm:ContentProvider

**Individuals/Instances:** not yet applicable

## 2.1.63 Class: vscm:UK

A concept that models all learning objects that are associated with the section “UK” of the course “What is there for me” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:WhatIsThereForMe

**Individuals/Instances:** not yet applicable

## 2.1.64 Class: vscm:UpperLimblmp

A concept that models the impairments that are associated with the upper limb.

**Superclass:** vscm:ImpairmentType

**Individuals/Instances:** MildUpperLimblmp, SevereUpperLimblmp, TouchUpperLimblmp

## 2.1.65 Class: vscm:UserProfile

A concept that models the Users of the ViPi platform. This is the second most important concept since it facilitates the profiling of the users in order to achieve semantic matching with Content Entities. The Users of the platform are further classified into Content Providers and Simple End-Users. A sub-set of the Content Providers can be also Teachers.

**Properties include:** vscm:hasimpairmentType, vscm:hasUserInfo

**Superclass:** vscm:VSCM\_Root

**Subclasses:** vscm:Trainee, vscm:ContentProvider

**Individuals/Instances:** not yet applicable

## 2.1.66 Class: vscm:UsingComputer

A concept that models all learning objects that are associated with the section “Using the computer” in the basic ICT Skills curriculum of the ViPi project

**Superclass:** vscm:ICTSkills

**Individuals/Instances:** DesktopIcons, FilesAndFolders, HelpFunctionality, ManagingWindows, TaskBar

## 2.1.67 Class: vscm:UsingVIPIPortal

A concept that models all learning objects that are associated with the section “Using the ViPi Portal” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:PracticalExercises

**Individuals/Instances:** AccessBenefitFromPortalContent, AccessBenefitFromRepository, AdoptOnlineLearningPlatform, UseVIPIMobileApps

## 2.1.68 Class: vscm:VisionImp

It models the vision impairment from all impairment types that a person of a disability might have.

**Superclass:** vscm:ImpairmentType

**Individuals/Instances:** MildVisionLimitation, ColourVisionLimitation, SevereVisionLimitation

## 2.1.69 Class: vscm:WebBrowsingAndSecurity

A concept that models all learning objects that are associated with the section “Web browsing and security” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:BrowsingTheWeb

**Individuals/Instances:** BasicProtectionMaliciousAttacks, ECommerceSafeUse, EmailSafeUsage, EncryptionDataSecurity, InternetSafeBrowsing, LegalIssues, Privacy, SocialMediaSafeUse

## 2.1.70 Class: vscm:WebBrowsingApplications

A concept that models all learning objects that are associated with the section “Web browsing applications” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:BrowsingTheWeb

**Individuals/Instances:** GoogleChrome, InternetExplorer, LynxTextBrowser, MozillaFirefox

## 2.1.71 Class: vscm:WhatIsThereForMe

A concept that models all learning objects that are associated with the course “What is there for me” in the basic ICT Skills curriculum of the ViPi project.

**Superclass:** vscm:ICTSkills

**Subclasses:**

vscm:UK, vscm:Lithuania, vscm:Greece, vscm:Europe, vscm:Cyprus, vscm:Belgium, vscm:AvailableSoftware

**Individuals/Instances:** not yet applicable

## 2.2 Object Properties

### 2.2.1 Property: vscm:addressesICTSkills

Associates a learning object with specific ICT skills, meaning that the specific learning object talks about and leads to the acquisition of the specific skills.

**Domains:** some LearningObject

**Ranges:** some AboutComputers, some AssistiveHardware, some AssistiveSoftware, some AssistiveTechnologies, some AvailableSoftware, some Belgium, some BrowsingTheWeb, some CollaborativeDocumentEditors, some CommunicationSoftware, some CommunicationTools, some Cyprus, some DocumentManagement, some Elearning, some EmailAndSecurity, some Europe, some Greece, some InputDevices, some Lithuania, some MobileDevices, some MobileSmartphonesTablets, some OnlineApplications, some OperatingSystems, some OutputDevices, some PracticalExercises, some SlideshowPresentationManagement, some SpreadsheetsManagement, some UK, some UsingComputer, some UsingVIPIPortal, some WebBrowsingAndSecurity, some WebBrowsingApplications, some WhatIsThereForMe

### 2.2.2 Property: vscm:forOperatingSystem

Associates learning objects with content related to specific operating systems, meaning that the specific learning object can be accessed by devices running the specific operating system.

**Domains:** some LearningObject

**Ranges:** some OperatingSystems

### 2.2.3 Property: vscm:hasAccessibilityLevel

Associates a content entity object with an accessibility level, meaning that the specific content is accessible up to the specific level.

**Domains:** some ContentEntity

**Ranges:** some AccessibilityLevels

## Property: vscm:hasAccreditationType

Associates a content entity object with an accreditation type, meaning that the specific content can lead to the specific type of accreditation.

**Domains:** some ContentEntity

**Ranges:** some AccreditationType

## 2.2.4 Property: vscm:hasPaymentMethod

Associates a content entity object with a payment method, meaning that the content entity is provided upon payment with the specific method.

**Domains:** some ContentEntity

**Ranges:** some PaymentMethod

## 2.2.5 Property: vscm:hasimpairmentType

Associates a user profile with an impairment type, meaning that the user has the specific impairment.

**Domains:** some UserProfile

**Ranges:** some ImpairmentType

## 2.2.6 Property: vscm:isCompatibleWithDevice

Associates a content entity with a device, meaning that the content entity can be accessed by the device.

**Domains:** some ContentEntity

**Ranges:** some Device

## 2.2.7 Property: vscm:isOfType

Associates a content entity with a type of content, meaning that the specific content is of the specific type.

**Domains:** some ContentEntity

**Ranges:** some ContentType

## 2.2.8 Property: vscm:prefersContentType

Associates a trainee with a type of content, meaning that the specific trainee prefers to see content of that specific type.

**Domains:** some Trainee

**Ranges:** some ContentType

## 2.2.9 Property: vscm:prefersLanguage

Associates a trainee with a language, meaning that the specific trainee prefers to read content written in the specific language.

**Domains:** some Trainee

**Ranges:** some Language

## 2.2.10 Property: vscm:prefersPaymentMethod

Associates a trainee that can be also a content provider or not, with a payment method, meaning that the specific content provider prefers to receive payments following the specific method, in case of learning objects that are charged.

**Domains:** some Trainee, some ContentProvider

**Ranges:** some PaymentMethods

## 2.2.11 Property: vscm:providedByUser

Associates a learning object with a content provider, meaning that the specific learning object had been uploaded in the ViPi platform by the specific provider.

**Domains:** some LearningObject

**Ranges:** some ContentProvider

## 2.2.12 Property: vscm:registersForAgeGroup

Associates a trainee with an age group, meaning that the specific trainee has an age characterized by the specific age group.

**Domains:** some Trainee

**Ranges:** some AgeGroups

## 2.2.13 Property: vscm:requiresRegistration

Associates a content entity with an object of the common data type boolean, meaning that to access the specific content entity the user has to be registered or not.

**Domains:** some ContentEntity

**Ranges:** some boolean



## 2.2.14 Property: vscm:specializesInImpairmentType

Associates a trainer with a type of impairment, meaning that the specific trainer has an expertise in providing training to persons that suffer from the specific type of impairment.

**Domains:** some Trainer

**Ranges:** some ImpairmentType

## 2.2.15 Property: vscm:specializesWithDevices

Associates a trainer with an assistive device, meaning that the specific trainer has an expertise in including the specific assistive devices in his/her teaching.

**Domains:** some Trainer

**Ranges:** some AssistiveDevice

## 2.2.16 Property: vscm:subscribesForICTSkills

Associates a trainee with ICT skills, meaning that the specific trainee has preference in accessing learning objects that are associated with specific ICT skills.

**Domains:** some Trainee

**Ranges:** some AboutComputers, some AssistiveHardware, some AssistiveSoftware, some AssistiveTechnologies, some AvailableSoftware, some Belgium, some BrowsingTheWeb, some CollaborativeDocumentEditors, some CommunicationSoftware, some CommunicationTools, some Cyprus, some DocumentManagement, some Elearning, some EmailAndSecurity, some Europe, some Greece, some InputDevices, some Lithuania, some MobileDevices, some MobilesSmartphonesTablets, some OnlineApplications, some OperatingSystems, some OutputDevices, some PracticalExercises, some SlideshowPresentationManagement, some SpreadsheetsManagement, some UK, some UsingComputer, some UsingVIPIPortal, some WebBrowsingAndSecurity, some WebBrowsingApplications, some WhatIsThereForMe

## 2.2.17 Property: vscm:suitableForAgeGroup

Associates a learning object with an age group, meaning that the specific learning object is allowed to be used for the training of persons classified under the specific age group.

**Domains:** some LearningObject

**Ranges:** some AgeGroups

## 2.2.18 Property: vscm:targetsUserGroup

Associates a content entity with an impairment type, meaning that the specific piece of content is accessible by persons suffering from the specific type of impairment.

**Domains:** some ContentEntity

**Ranges:** some ImpairmentType

### 2.2.19 Property: vscm:teachesInLanguage

Associates a trainer with a language, meaning that the specific trainer has expertise in using the specific language in his/her teaching.

**Domains:** some Trainer

**Ranges:** some Language

### 2.2.20 Property: vscm:usesDevices

Associates a trainee with an assistive device, meaning that the specific trainee makes use of the specific assistive device.

**Domains:** some Trainee

**Ranges:** some AssistiveDevice

### 2.2.21 Property: vscm:costs

Associates a content entity with the common data type “float number”, meaning that the specific piece of content has that specific cost, in Euros.

**Domains:** ContentEntity

**Ranges:** topDataProperty some float

### 2.2.22 Property: vscm:hasUserInfo

Associates a platform user with the common data type “literal” (some piece of text), meaning that the specific user is described by the specific piece of text. This is used to host any extra, non-structured, information about the user.

**Domains:** some UserProfile

**Ranges:** some literal

## 2.3 Annotation Properties

### 2.3.1 Property: vscm:DutchTranslation

All components of the ontology, classes/properties/individuals, are associated with a property “DutchTranslation”, aiming at hosting the translation of the entity name in the Dutch language.

**Superproperty:** rdfs:label

### 2.3.2 Property: vscm:EnglishTranslation

All components of the ontology, classes/properties/individuals, are associated with a property “EnglishTranslation”, aiming at hosting the translation of the entity name in the English language.

**Superproperty:** rdfs:label

### 2.3.3 Property: vscm:GreekTranslation

All components of the ontology, classes/properties/individuals, are associated with a property “GreekTranslation”, aiming at hosting the translation of the entity name in the Greek language

**Superproperty:** rdfs:label

### 2.3.4 Property: vscm:LithaunianTranslation

All components of the ontology, classes/properties/individuals, are associated with a property “LithuanianTranslation”, aiming at hosting the translation of the entity name in the Lithuanian language.

**Superproperty:** rdfs:label

### 2.3.5 Property: vscm:forLOAnnotation

All components of the ontology, classes/properties/individuals, are associated with a property “forLOAnnotation”, which is used to indicate whether the component will be used by the VSCM plugin to annotate the learning objects or not. It takes the values YES or NO.

**Superproperty:** rdfs:label

### 2.3.6 Property: vscm:forUserAnnotation

All components of the ontology, classes/properties/individuals, are associated with a property “forUserAnnotation”, which is used to indicate whether the component will be used by the VSCM plugin to annotate the user profiles or not. It takes the values YES or NO.

**Superproperty:** rdfs:label