



**POLITECNICO**  
**MILANO 1863**

## Design Document

Lorenzo Fratus, 10619073, lorenzo1.fratus@mail.polimi.it  
Simone Orlando, 10530758, simone.orlando@mail.polimi.it  
Cristian C. Spagnuolo, 10745353, cristiancarmine.spagnuolo@mail.polimi.it

Course: Hypermedia Applications

Professor: Franca Garzotto

Delivery date: 28/06/2021

Link to prototype: [securenetwork.herokuapp.com](https://securenetwork.herokuapp.com)

Github repository: [SecureNetworkRebrand.git](https://github.com/SecureNetworkRebrand)

June 2, 2021

# Contents

<b>1 Abstract</b>	<b>3</b>
<b>2 C-IDM Diagram</b>	<b>4</b>
<b>3 Content tables</b>	<b>5</b>
<b>4 Mapping Content Tables into Pages</b>	<b>7</b>
<b>5 P-IDM diagram</b>	<b>10</b>
<b>6 Visual Design</b>	<b>11</b>
6.1 Low-Fidelity Wireframes . . . . .	11
6.1.1 Home Page . . . . .	11
6.1.2 Topic: Contacts . . . . .	12
6.1.3 Kind of Topic: Area . . . . .	13
6.1.4 Kind of Topic: Person . . . . .	14
6.1.5 Kind of Topic: Service . . . . .	15
6.1.6 Kind of Topic: Resource . . . . .	15
6.1.7 Group: Areas . . . . .	16
6.1.8 Group: Team . . . . .	17
6.1.9 Group: Resources . . . . .	18
6.2 High-Fidelity Screenshots . . . . .	19
6.2.1 Home Page . . . . .	19
6.2.2 Topic: Contacts . . . . .	20
6.2.3 Kind of Topic: Area . . . . .	21
6.2.4 Kind of Topic: Person . . . . .	22
6.2.5 Kind of Topic: Service . . . . .	23
6.2.6 Kind of Topic: Resource . . . . .	24
6.2.7 Group: Areas . . . . .	24
6.2.8 Group: Team . . . . .	25
6.2.9 Group: Resources . . . . .	26
<b>7 Interaction Scenarios</b>	<b>27</b>
7.1 Scenario 1 . . . . .	27
7.2 Scenario 2 . . . . .	29
7.3 Scenario 3 . . . . .	30

7.4	Scenario 4	31
<b>8</b>	<b>DB Design</b>	<b>32</b>

# **Abstract**

The purpose of this document is to show the stages for the design and development of the website for the company Secure Network. In particular, we will focus on the frontend development of the site describing the design in the large and in the small through the diagrams C-IDM and P-IDM. We will report some images of the final graphics of the site and illustrate hypothetical scenarios of interaction with it. Finally, we will present the database structure designed to support the site with the respective E-R diagram.

# C-IDM Diagram

In this section we report the C-IDM diagram that we used as a basic structure for the development of the design of our website. It includes all the *Topics*, *Kind of Topics*, *Groups of Topics*, *Multiple Groups of Topics* and *Nested Groups of Topics* regarding the specification. In addition, all relevant relations and their cardinalities have been reported.

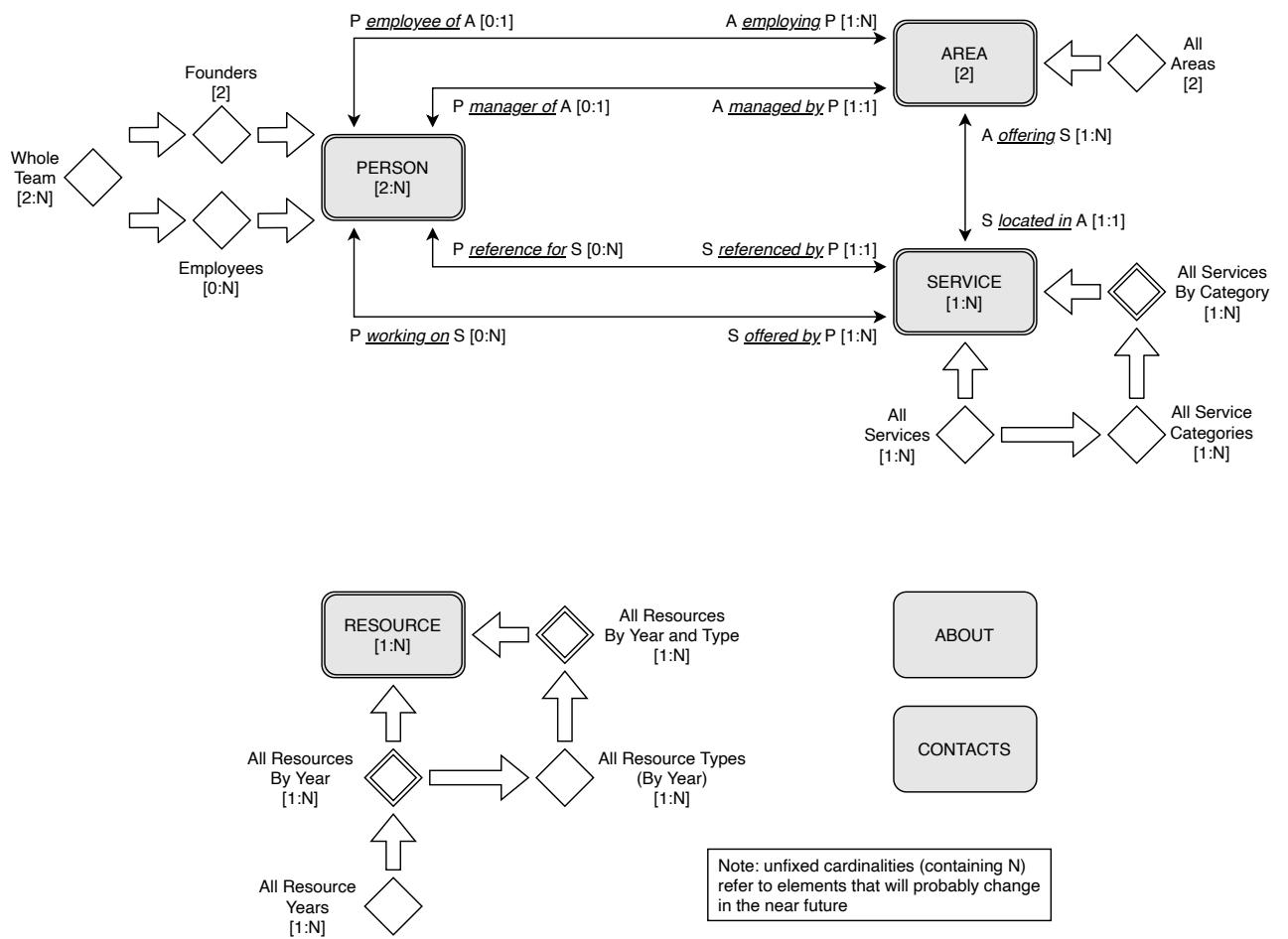


Figure 2.1: C-IDM Diagram

# Content tables

Here we illustrate the content tables that expand the C-IDM diagram of the previous chapter.

GROUP: All Resource Years
TITLE: "All Our Resources Year By Year"
COVER: Image (Decorative)
SECTION TITLE: "Select Any Year"
YEARS PREVIEW: List [Year, List [Number of resources for each type, Type of resource]]]

MULTIPLE GROUP: All Resources by Year X and Type Y
TITLE: "All Resources Of" + Year
COVER: Image (Decorative)
RESOURCES PREVIEW: List [Date, Subtitle (max 15 words)]

MULTIPLE GROUP: All Resources by Year X
TITLE: "All Resources Of" + Year
COVER: Image (Decorative)
RESOURCES PREVIEW: List [Date, Subtitle (max 15 words)]

KIND OF TOPIC: Resource X
TITLE: Resource Date
SUBTITLE: Resource Title (max 10 words)
COVER: Image (Decorative)
SECTION TITLE: Resource Subtitle (max 15 words)
RESOURCE: Text (max 150 words + external links)

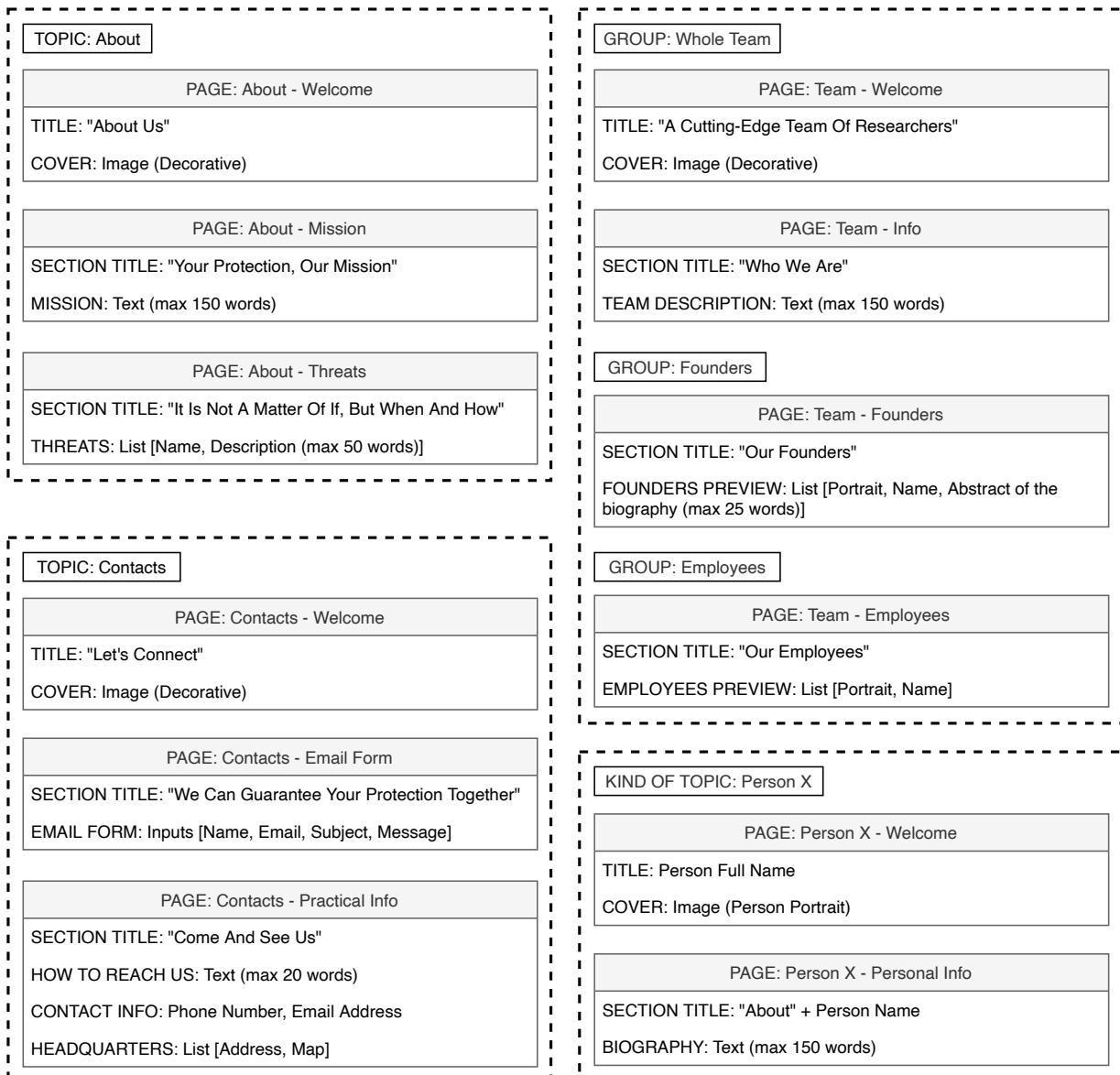
GROUP: All Resource Types by Year X
SECTION TITLE: "Filter Resources By"
FILTERS: All resources, List [Type of resource]

<p>TOPIC: About</p> <p>TITLE: "About Us"</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "Your Protection, Our Mission"</p> <p>MISSION: Text (max 150 words)</p> <p>SECTION TITLE: "It Is Not A Matter Of If, But When And How"</p> <p>THREATS: List [Name, Description (max 50 words)]</p>	<p>GROUP: All Areas</p> <p>TITLE: "Our Fields Of Expertise"</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "Overview"</p> <p>INTRODUCTION: Text (max 150 words)</p> <p>AREAS PREVIEW: List [Image, Name, Abstract of Description (max 25 words)]</p>
<p>TOPIC: Contacts</p> <p>TITLE: "Let's Connect"</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "We Can Guarantee Your Protection Together"</p> <p>EMAIL FORM: Inputs [Name, Email, Subject, Message]</p> <p>SECTION TITLE: "Come And See Us"</p> <p>HOW TO REACH US: Text (max 20 words)</p> <p>CONTACT INFO: Phone Number, Email Address</p> <p>HEADQUARTERS: List [Address, Map]</p>	<p>KIND OF TOPIC: Area X</p> <p>TITLE: Area Name</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "About This Area"</p> <p>AREA DESCRIPTION: Text (max 150 words)</p>
<p>GROUP: Whole Team</p> <p>TITLE: "A Cutting-Edge Team Of Researchers"</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "Who We Are"</p> <p>TEAM DESCRIPTION: Text (max 150 words)</p>	<p>GROUP: All Services</p> <p>TITLE: "All Available Services"</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "Full Coverage To Meet Specific Demands"</p> <p>INTRODUCTION: Text (max 150 words)</p> <p>SERVICES PREVIEW: List [Image, Name, Abstract of Description (max 15 words)]</p>
<p>GROUP: Founders</p> <p>SECTION TITLE: "Our Founders"</p> <p>FOUNDERS PREVIEW: List [Portrait, Name, Abstract of the biography (max 25 words)]</p>	<p>GROUP: All Service Categories</p> <p>TITLE: "All Service Categories"</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "Full Coverage To Meet Specific Demands"</p> <p>INTRODUCTION: Text (max 150 words)</p> <p>CATEGORIES PREVIEW: List [Name, Abstract of Description (max 15 words)]</p>
<p>GROUP: Employees</p> <p>SECTION TITLE: "Our Employees"</p> <p>EMPLOYEES PREVIEW: List [Portrait, Name]</p>	<p>MULTIPLE GROUP: All Services by Category X</p> <p>TITLE: Category Name</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "About This Category"</p> <p>INTRODUCTION: Text (max 150 words)</p> <p>SERVICES PREVIEW: List [Image, Name, Abstract of Description (max 15 words)]</p>
<p>KIND OF TOPIC: Person X</p> <p>TITLE: Person Full Name</p> <p>COVER: Image (Person Portrait)</p> <p>SECTION TITLE: "About" + Person Name</p> <p>BIOGRAPHY: Text (max 150 words)</p>	<p>KIND OF TOPIC: Service X</p> <p>TITLE: Service Name</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "Service Overview"</p> <p>DESCRIPTION: Text (max 150 words)</p>

Figure 3.1: Content tables (C-IDM in the small)

# Mapping Content Tables into Pages

Continuing, we present the result of the application of the process of page mapping to the content tables reported in the last chapter. Each table has been divided into a series of pages, in order to increase the degree of granularity.



<p>GROUP: All Areas</p> <p>PAGE: Areas - Welcome</p> <p>TITLE: "Our Fields Of Expertise"</p> <p>COVER: Image (Decorative)</p> <p>PAGE: Areas - Introduction</p> <p>AREAS PREVIEW: List [Image, Name, Abstract of Description (max 25 words)]</p> <p>PAGE: Areas - Previews</p> <p>AREAS PREVIEW: List [Image, Name, Abstract of Description (max 25 words)]</p>	<p>GROUP: All Service Categories</p> <p>PAGE: Categories - Welcome</p> <p>TITLE: "All Service Categories"</p> <p>COVER: Image (Decorative)</p> <p>PAGE: Categories - Introduction</p> <p>SECTION TITLE: "Full Coverage To Meet Specific Demands"</p> <p>INTRODUCTION: Text (max 150 words)</p> <p>PAGE: Categories - Previews</p> <p>CATEGORIES PREVIEW: List [Name, Abstract of Description (max 15 words)]</p>
<p>KIND OF TOPIC: Area X</p> <p>PAGE: Area X - Welcome</p> <p>TITLE: Area Name</p> <p>COVER: Image (Decorative)</p> <p>PAGE: Area X - Info</p> <p>SECTION TITLE: "About This Area"</p> <p>AREA DESCRIPTION: Text (max 150 words)</p>	<p>MULTIPLE GROUP: All Services by Category X</p> <p>PAGE: Category X - Welcome</p> <p>TITLE: Category Name</p> <p>COVER: Image (Decorative)</p> <p>PAGE: Category X - Introduction</p> <p>SECTION TITLE: "About This Category"</p> <p>INTRODUCTION: Text (max 150 words)</p> <p>PAGE: Category X - Previews</p> <p>SERVICES PREVIEW: List [Image, Name, Abstract of Description (max 15 words)]</p>
<p>GROUP: All Services</p> <p>PAGE: Services - Welcome</p> <p>TITLE: "All Available Services"</p> <p>COVER: Image (Decorative)</p> <p>PAGE: Services - Introduction</p> <p>SECTION TITLE: "Full Coverage To Meet Specific Demands"</p> <p>INTRODUCTION: Text (max 150 words)</p> <p>PAGE: Services - Previews</p> <p>SERVICES PREVIEW: List [Image, Name, Abstract of Description (max 15 words)]</p>	<p>KIND OF TOPIC: Service X</p> <p>PAGE: Service X - Welcome</p> <p>TITLE: Service Name</p> <p>COVER: Image (Decorative)</p> <p>PAGE: Service X - Info</p> <p>SECTION TITLE: "Service Overview"</p> <p>DESCRIPTION: Text (max 150 words)</p>

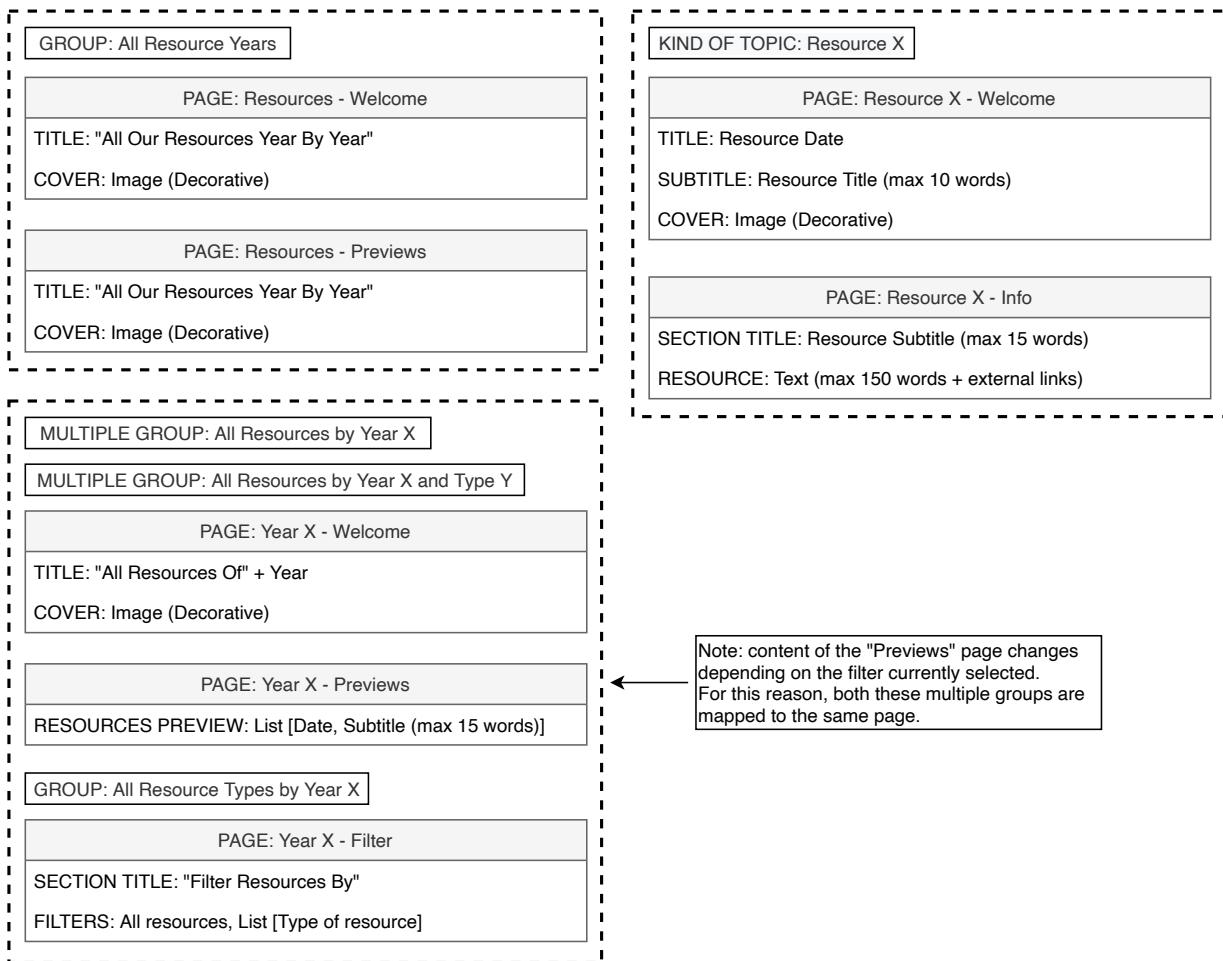


Figure 4.1: Pages mapping

# P-IDM diagram

In this section we report the P-IDM diagram which describes the navigation design of our website.

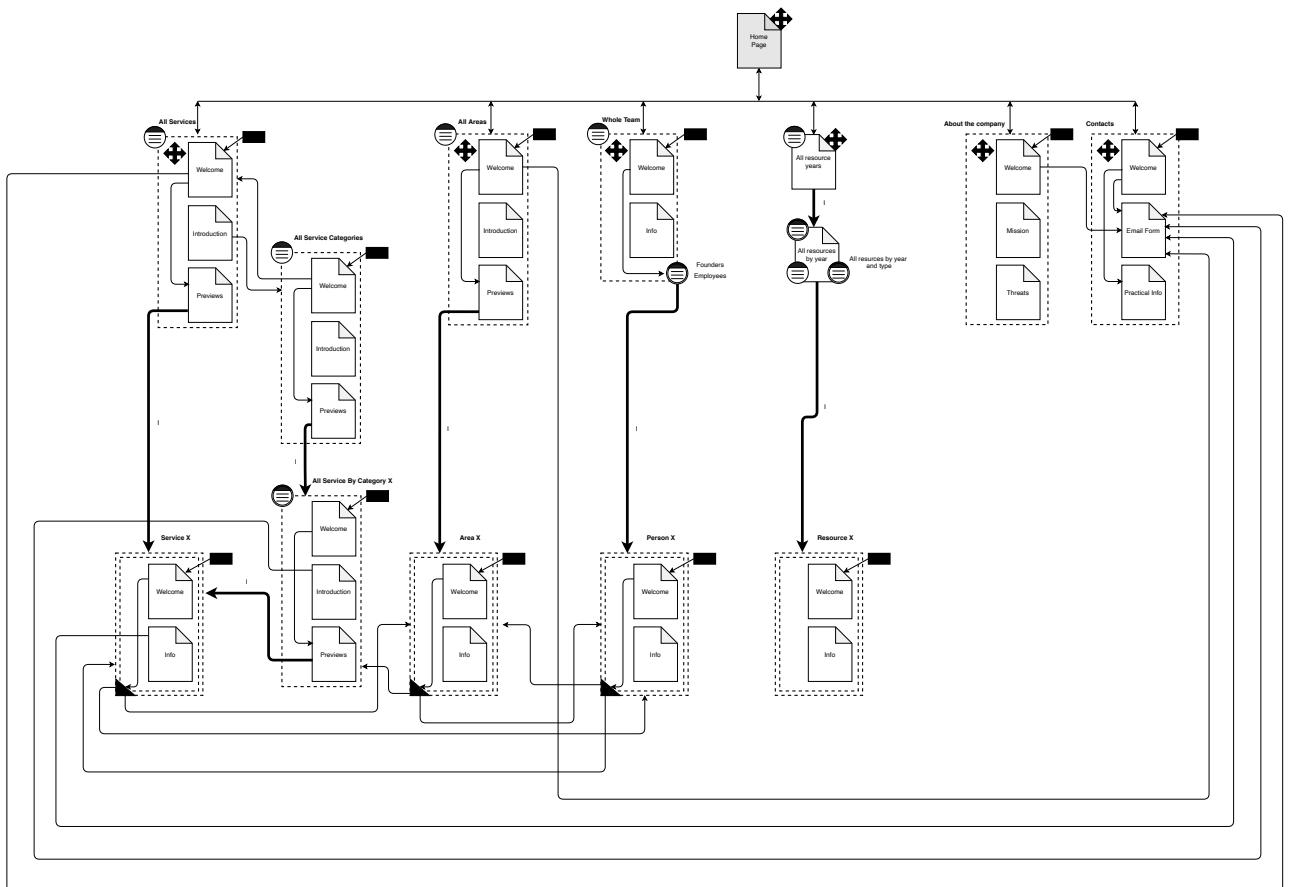


Figure 5.1: P-IDM Diagram

# Visual Design

## 6.1 Low-Fidelity Wireframes

### 6.1.1 Home Page

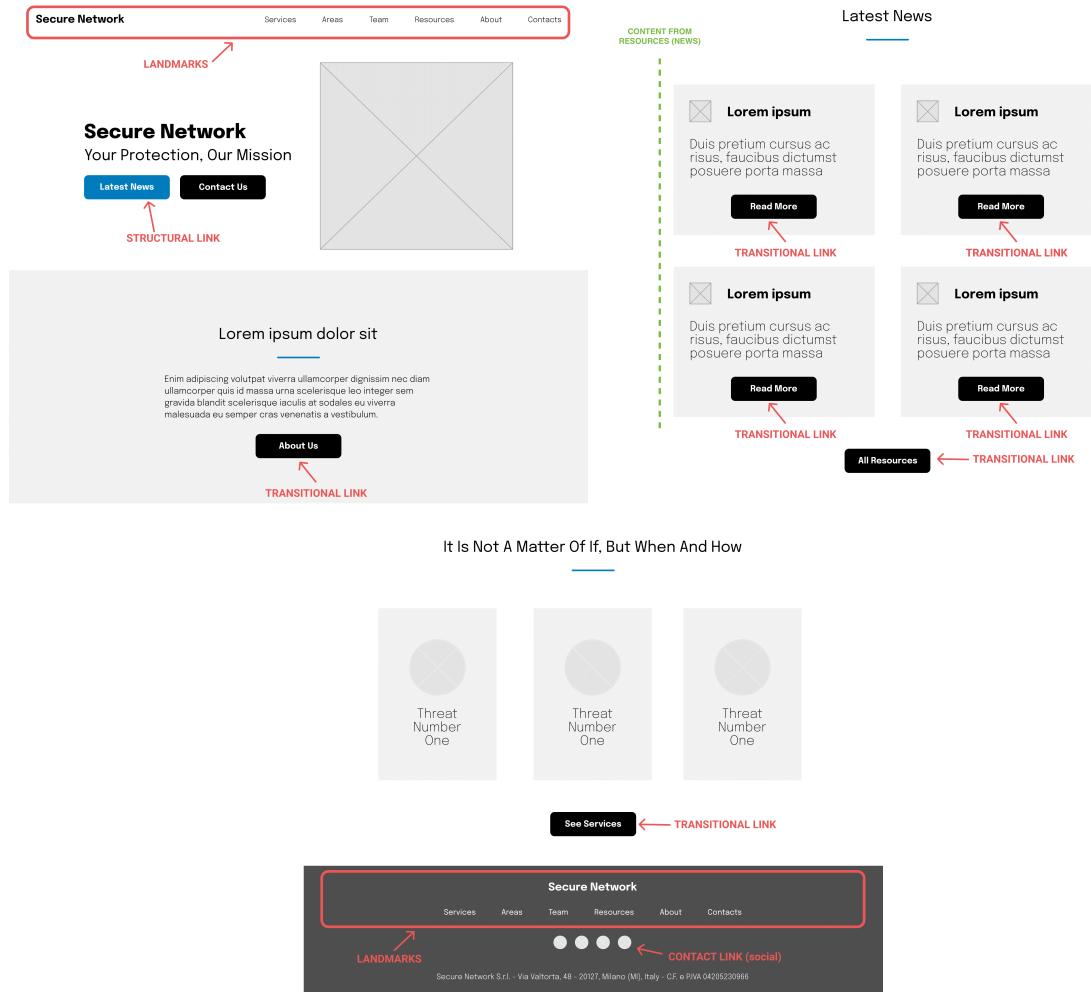


Figure 6.1: Commented wireframes for the Home page.

## 6.1.2 Topic: Contacts

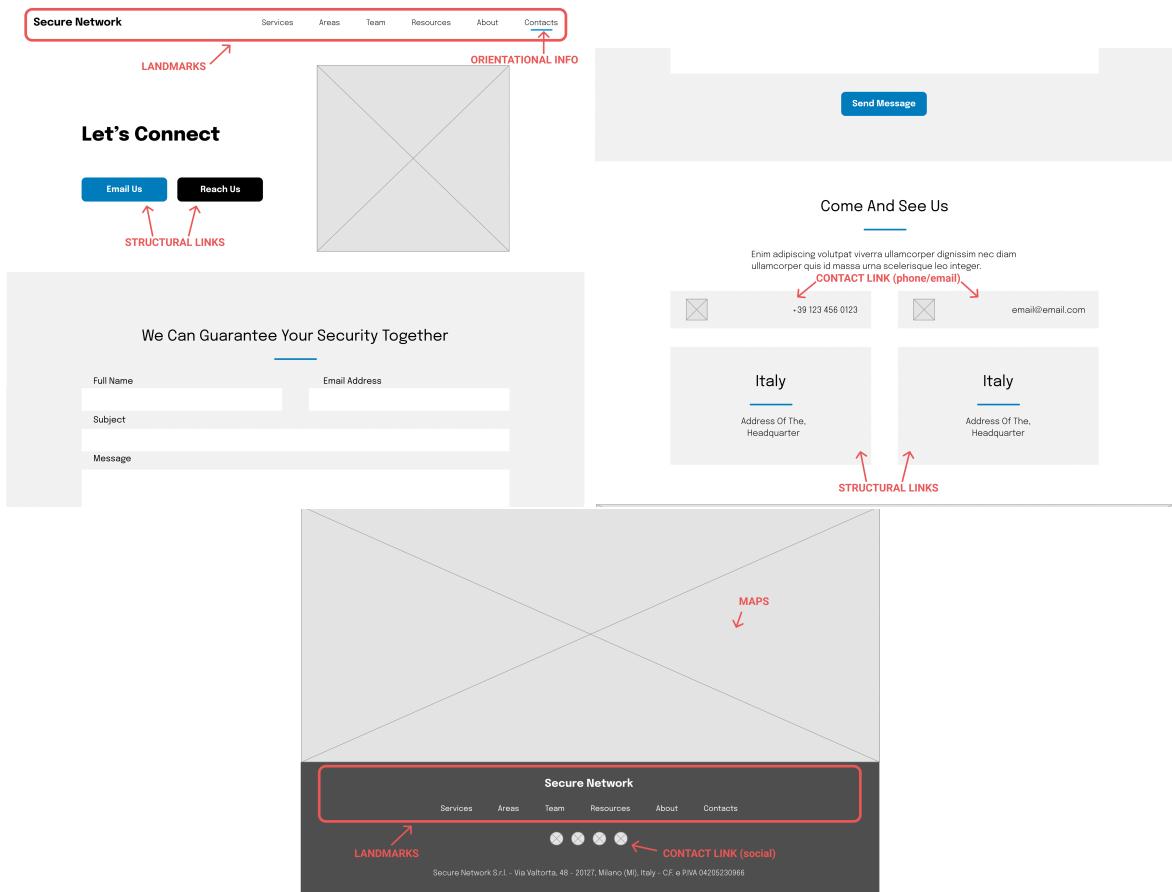


Figure 6.2: Commented wireframes for the Contacts page.

### 6.1.3 Kind of Topic: Area

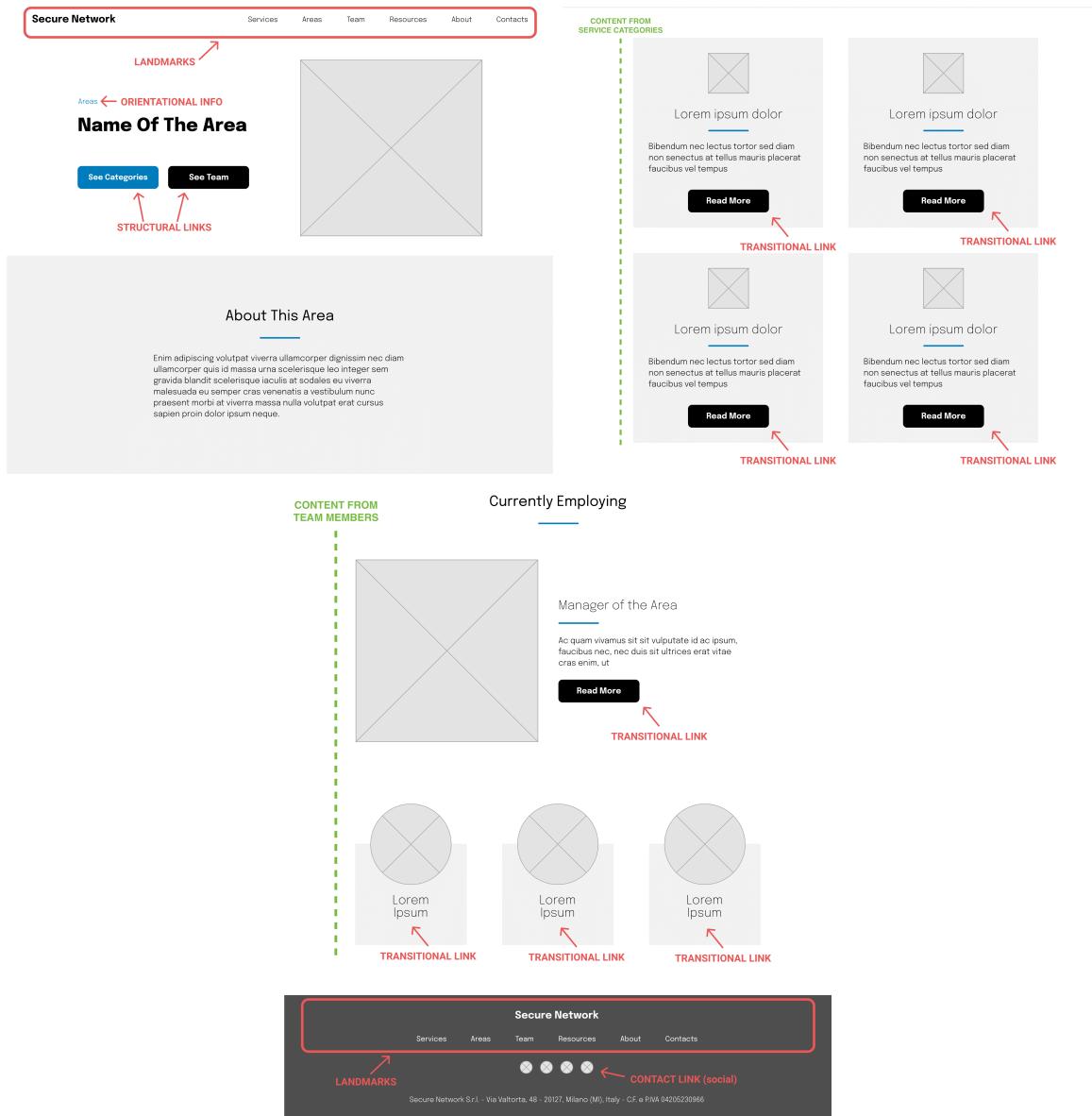


Figure 6.3: Commented wireframes for the Area page.

## 6.1.4 Kind of Topic: Person

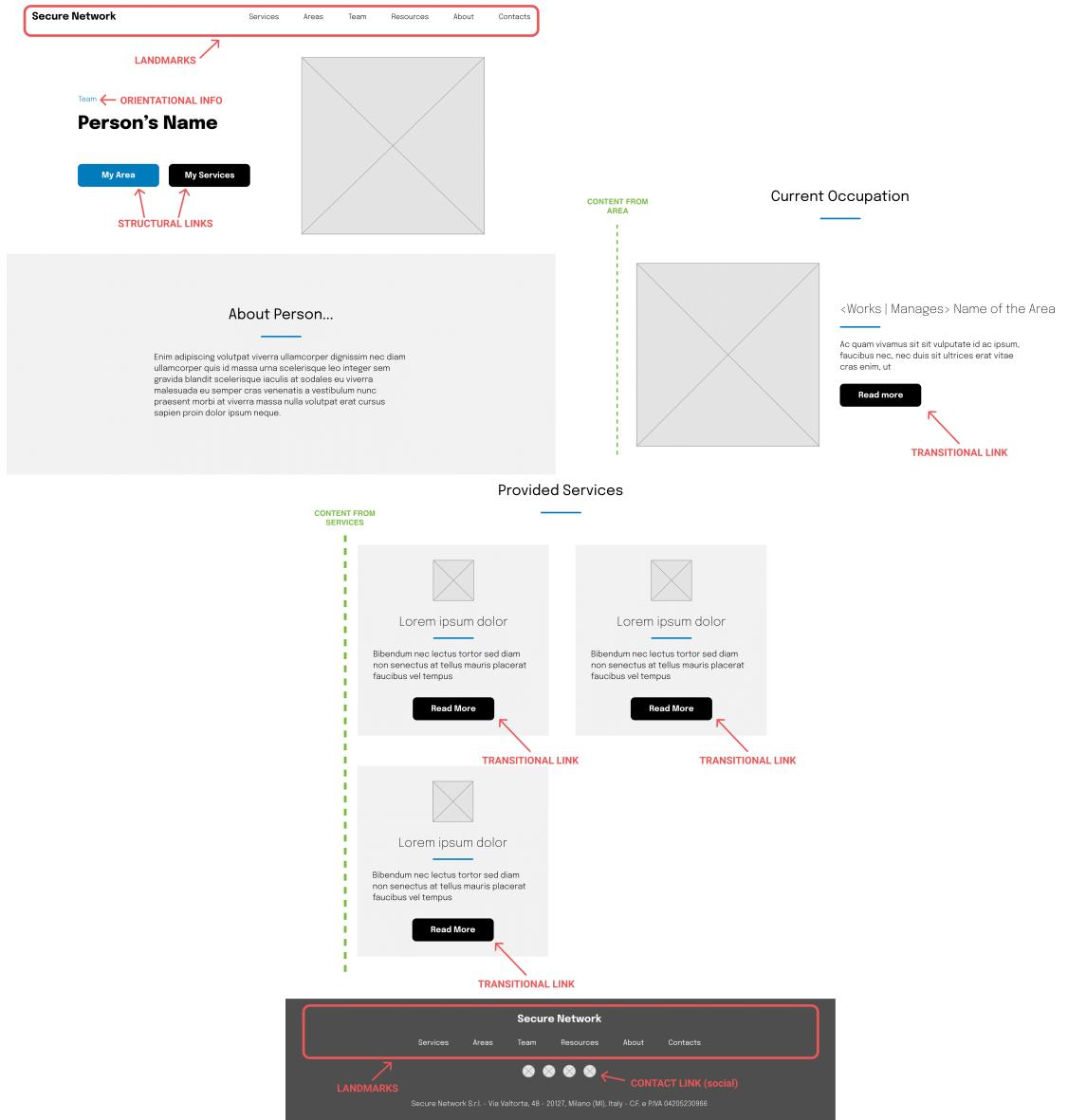


Figure 6.4: Commented wireframes for the Person page.

## 6.1.5 Kind of Topic: Service

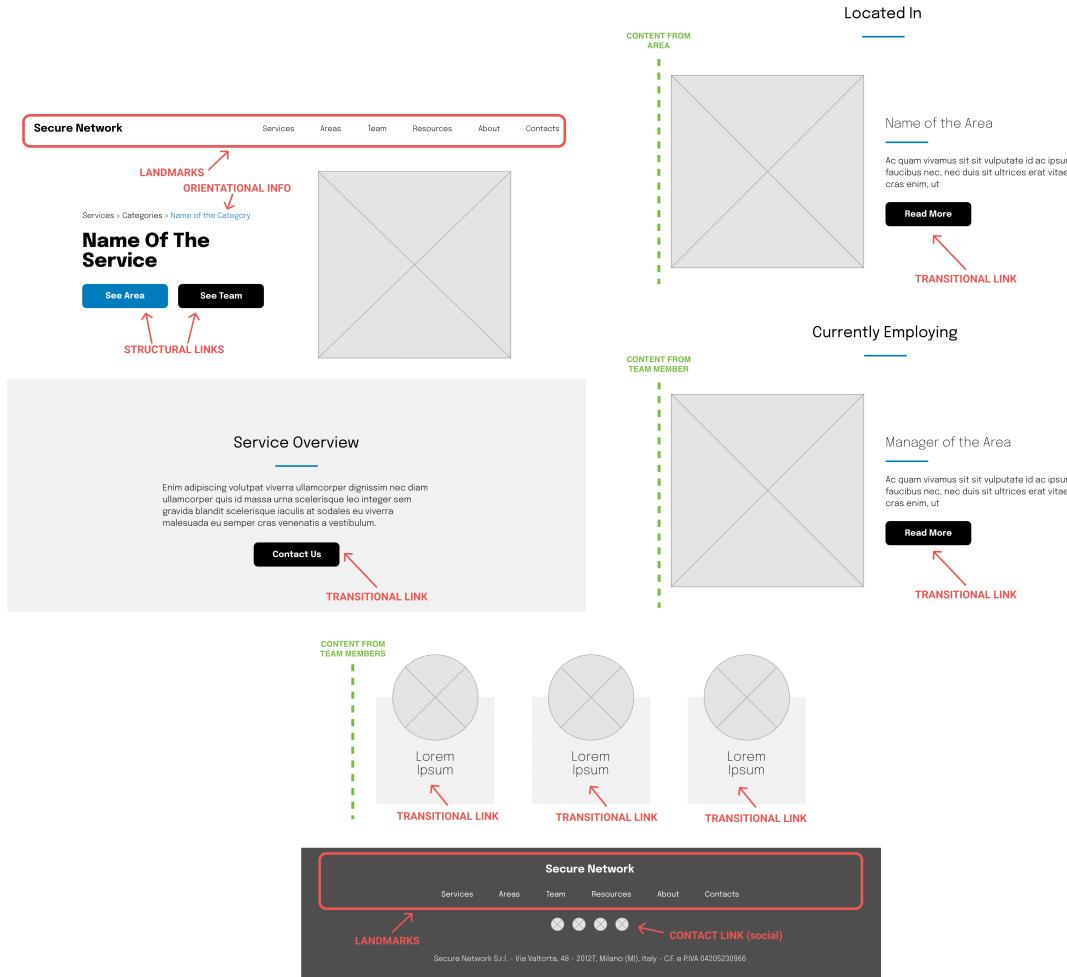


Figure 6.5: Commented wireframes for the Service page.

## 6.1.6 Kind of Topic: Resource

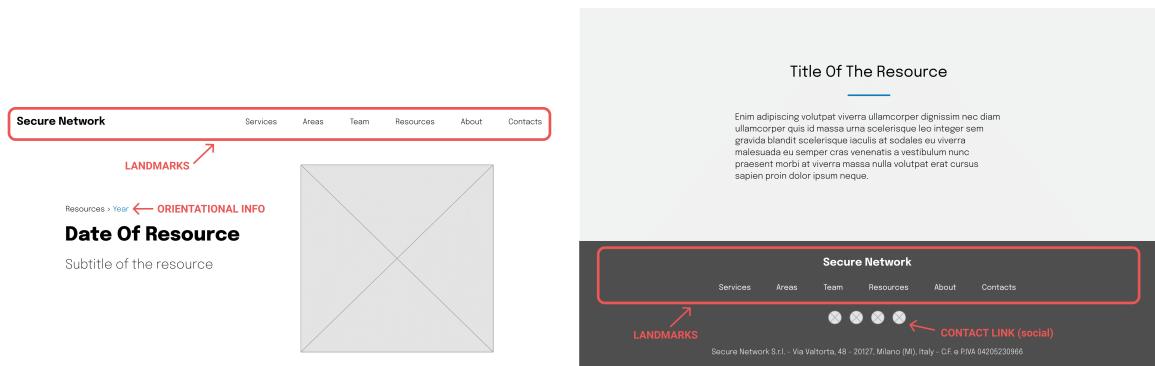


Figure 6.6: Commented wireframes for the Resources page.

## 6.1.7 Group: Areas

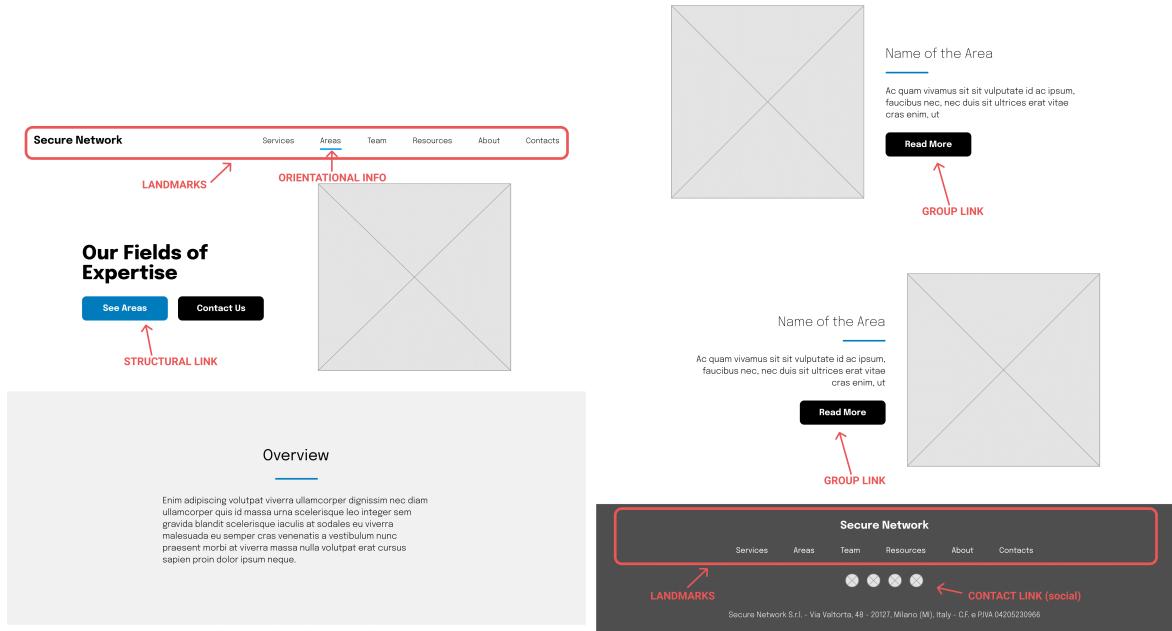


Figure 6.7: Commented wireframes for the Areas page.

## 6.1.8 Group: Team

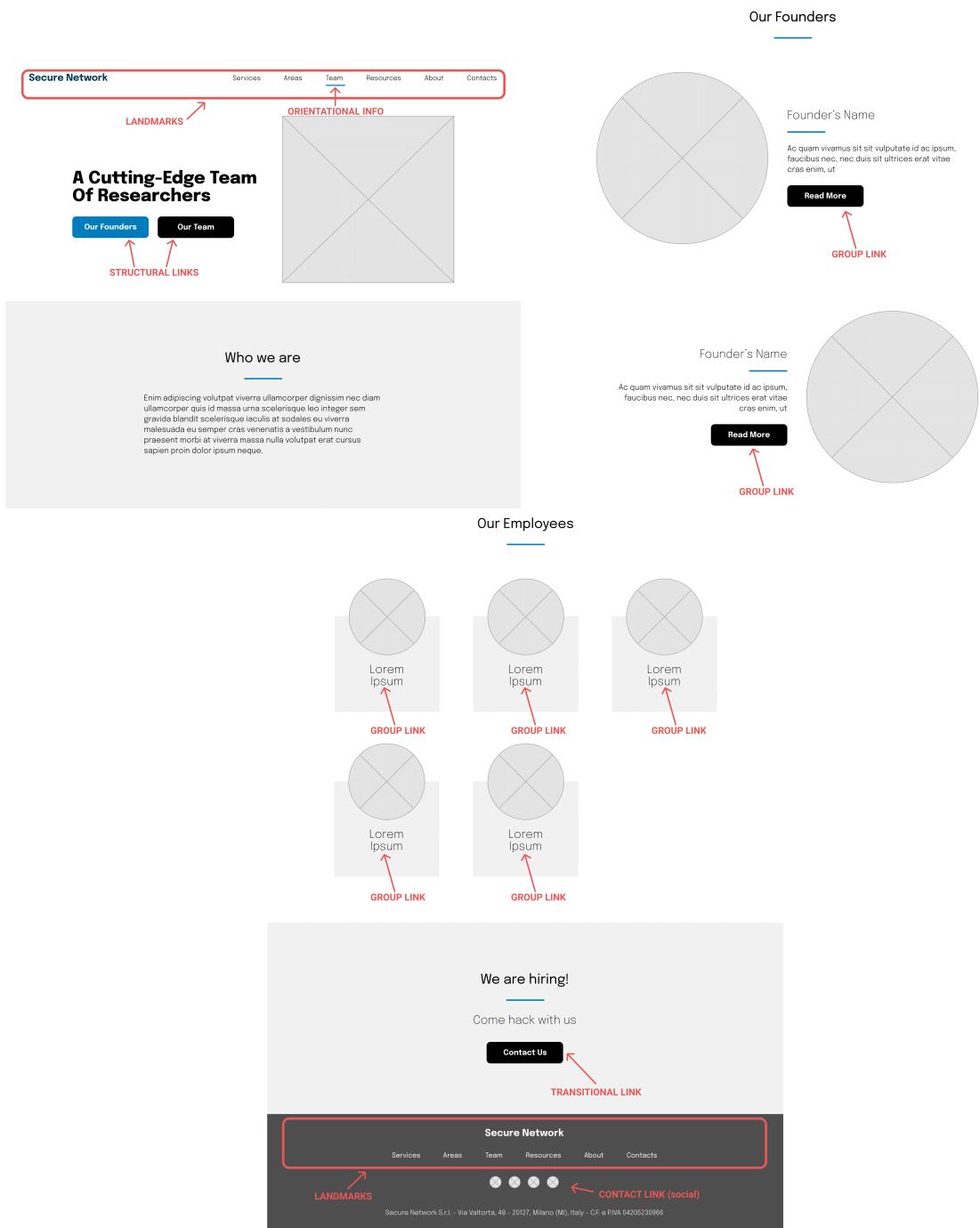


Figure 6.8: Commented wireframes for the Team page.

## 6.1.9 Group: Resources

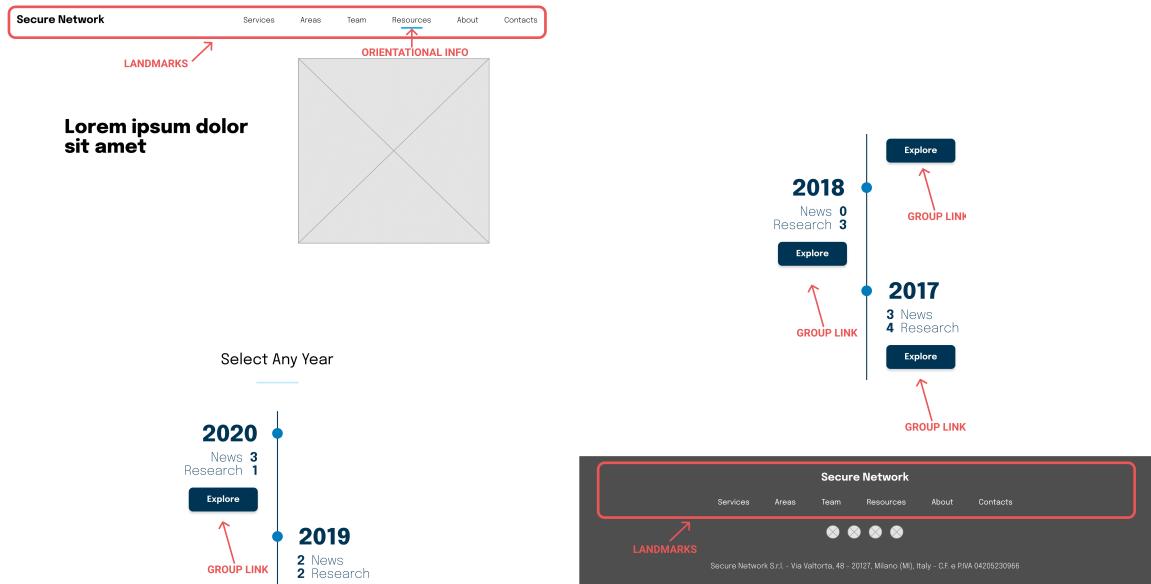


Figure 6.9: Commented wireframes for the Resources page.

## 6.2 High-Fidelity Screenshots

### 6.2.1 Home Page

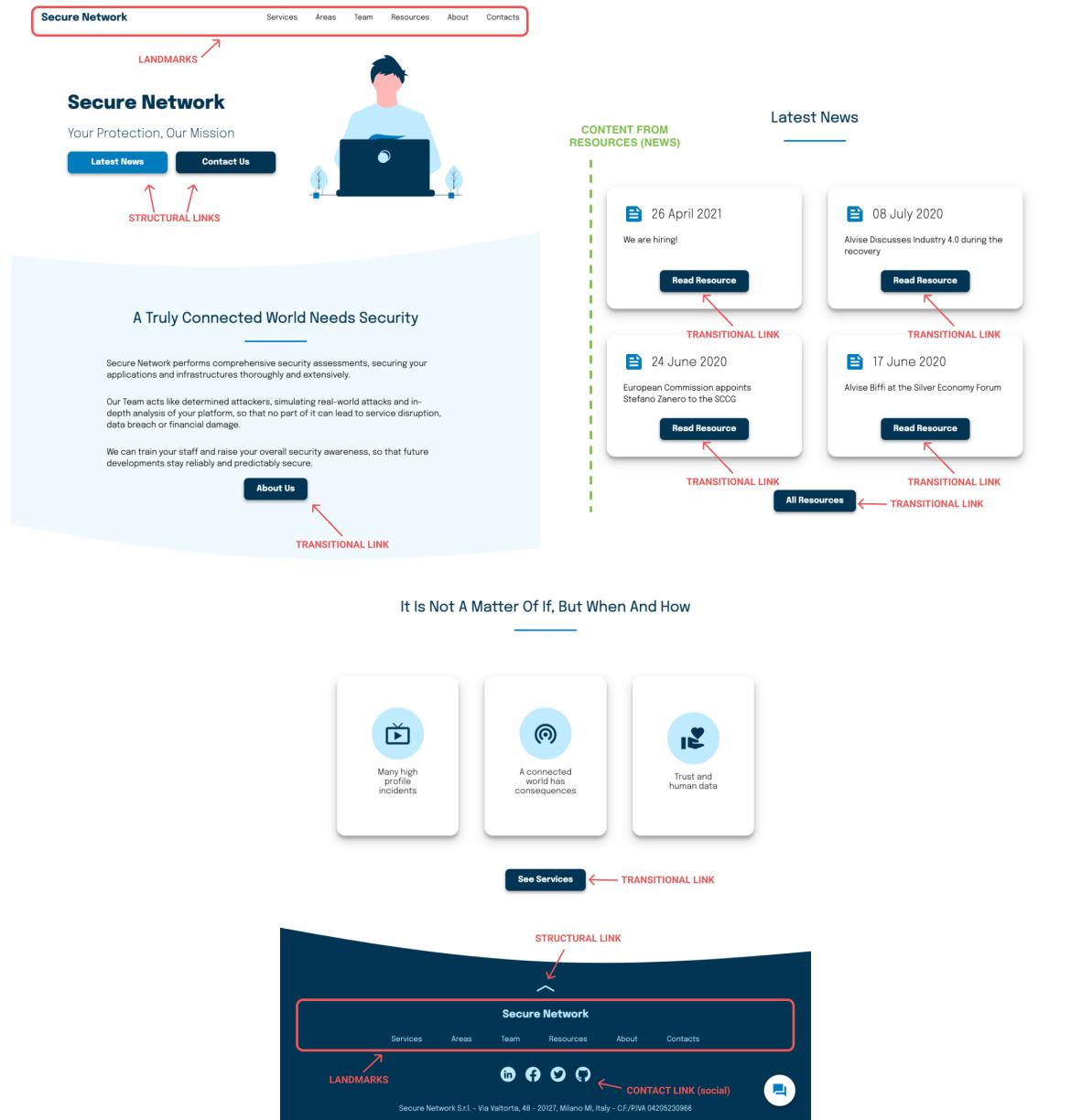


Figure 6.10: Commented screenshots for the Home page.

## 6.2.2 Topic: Contacts

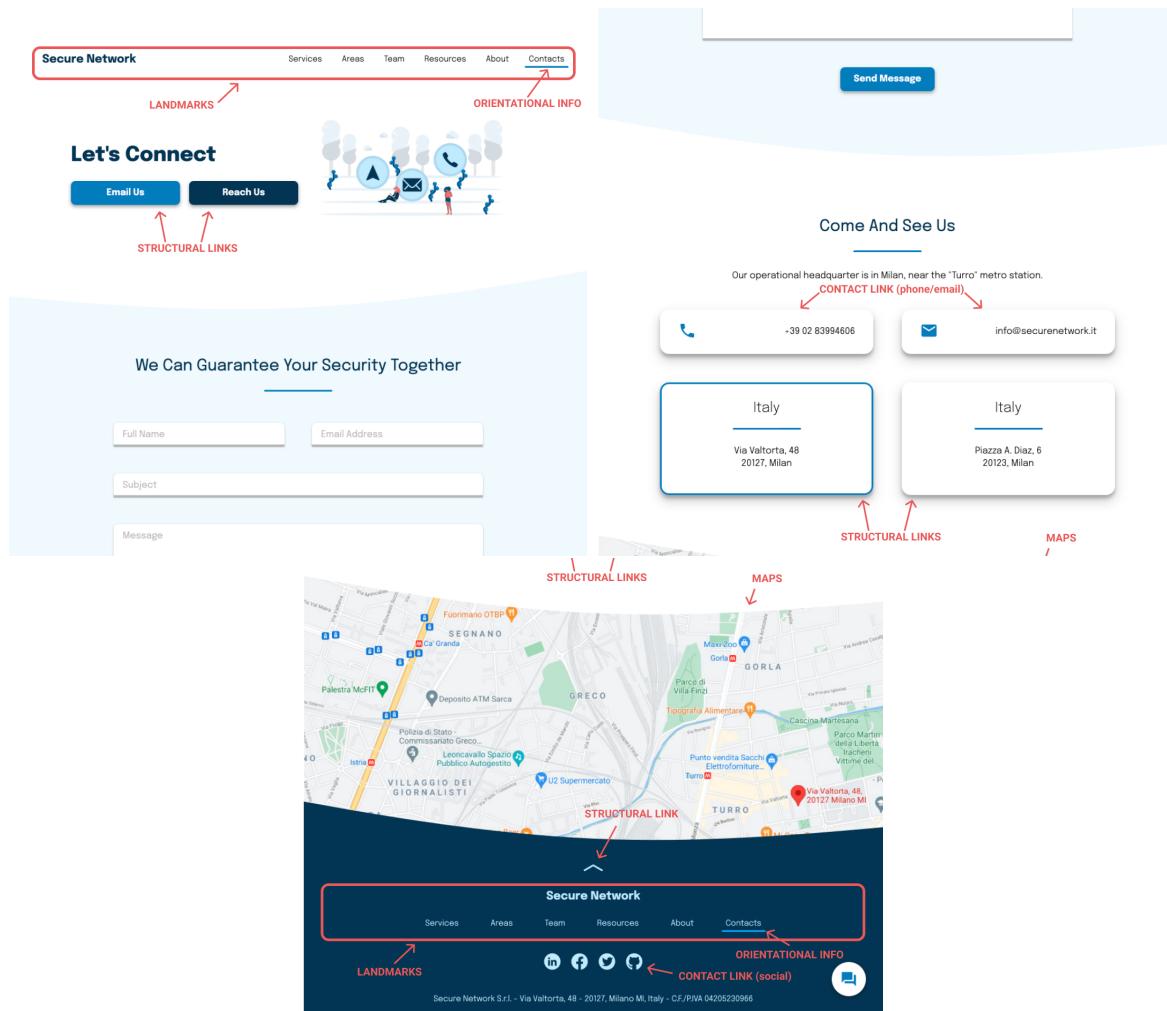


Figure 6.11: Commented screenshots for the Contacts page.

### 6.2.3 Kind of Topic: Area

The figure consists of four commented screenshots illustrating the navigation and content structure of the 'Area' page:

- Top Left Screenshot:** Shows the main header 'Secure Network' with a red box around it. Below the header are menu items: Services, Areas, Team, Resources, About, and Contacts. A red arrow labeled 'LANDMARKS' points to the 'Areas' menu item. Another red arrow labeled 'ORIENTATIONAL INFO' points to the 'Training' section below. Within the 'Training' section, there are two buttons: 'See Categories' and 'See Team'. Red arrows labeled 'STRUCTURAL LINKS' point from these buttons up towards the 'See Categories' and 'See Team' buttons.
- Top Right Screenshot:** Titled 'Categories Of Services', it shows three service categories: 'Binary Exploitation Training', 'Mobile Security Training', and 'Web Exploitation Training'. Each category card includes a small icon, a title, a brief description, and a 'Explore Category' button. Red arrows labeled 'TRANSITIONAL LINK' point from the 'Explore Category' buttons to the bottom of each category card.
- Bottom Left Screenshot:** Titled 'Currently Employing', it shows a 'CONTENT FROM TEAM MEMBERS' section. It features a large circular profile picture of 'MANAGER Riccardo Cospite' with descriptive text and a 'Discover' button. Below this are three smaller circular profiles for 'Andrea Jegher', 'Diego Zaffaroni', and 'Enrico Coronese', each with a 'Discover' button. Red arrows labeled 'TRANSITIONAL LINK' point from the 'Discover' buttons to the bottom of their respective cards.
- Bottom Right Screenshot:** Shows the footer area of the 'Secure Network' page. It includes the 'Secure Network' logo, menu items: Services, Areas, Team, Resources, About, and Contacts, and social media icons for LinkedIn, Facebook, Twitter, and YouTube. A red arrow labeled 'CONTACT LINK (social)' points to the social media icons. A red arrow labeled 'STRUCTURAL LINK' points to the 'LANDMARKS' section at the bottom of the page.

Figure 6.12: Commented screenshots for the Area page.

## 6.2.4 Kind of Topic: Person



Figure 6.13: Commented screenshots for the Person page.

## 6.2.5 Kind of Topic: Service

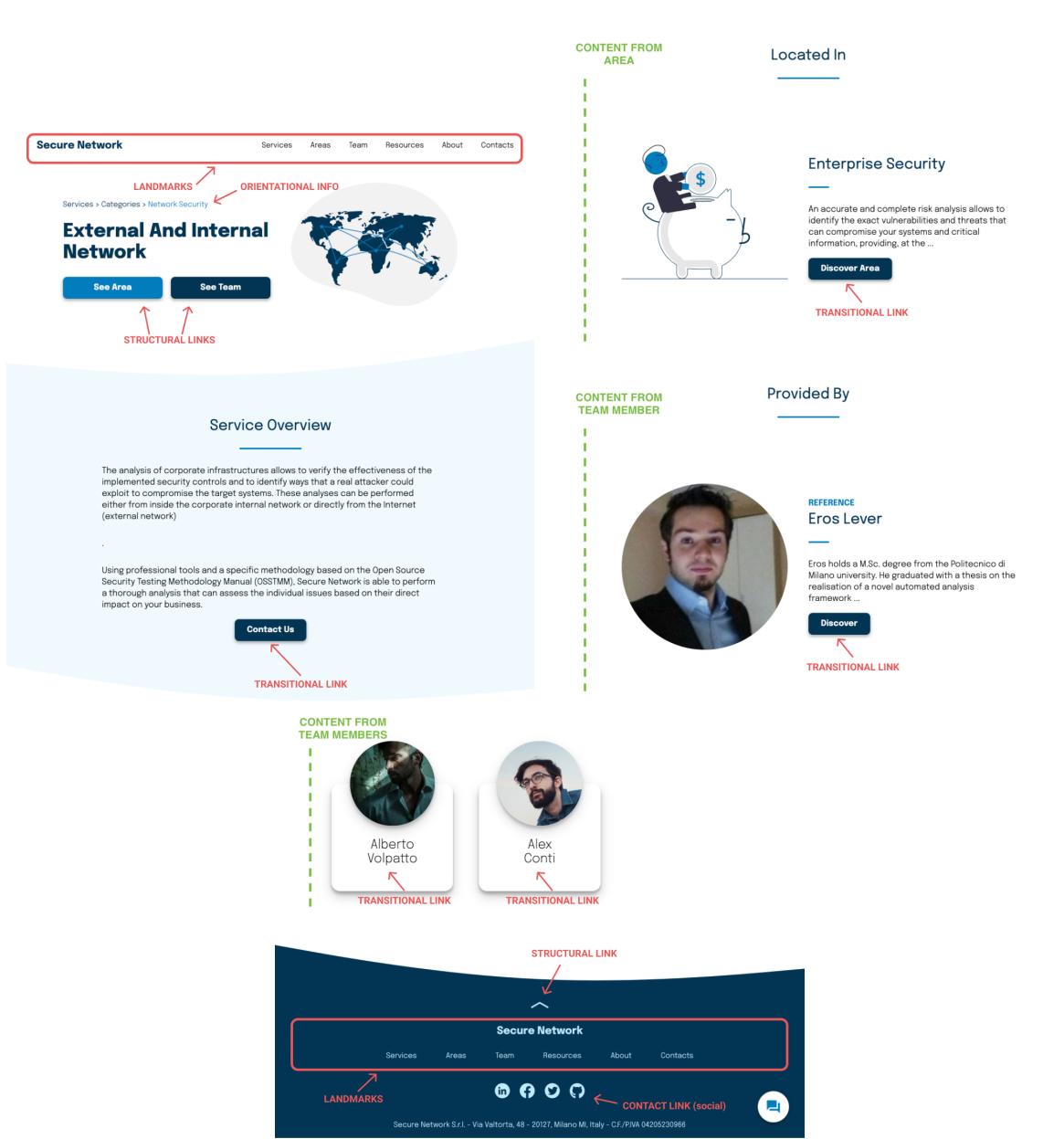


Figure 6.14: Commented screenshots for the Service page.

## 6.2.6 Kind of Topic: Resource

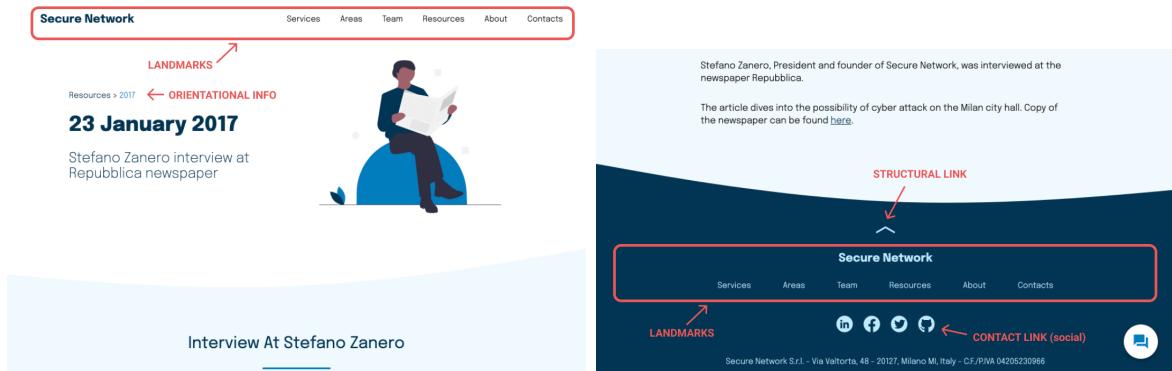


Figure 6.15: Commented screenshots for the Resources page.

## 6.2.7 Group: Areas



Figure 6.16: Commented screenshots for the Areas page.

## 6.2.8 Group: Team

The figure consists of five commented screenshots illustrating the Team page of a website:

- Top Left:** A screenshot of the "Secure Network" homepage featuring a navigation bar with links: Services, Areas, Team, Resources, About, and Contacts. Below the navigation is a section titled "A Cutting-Edge Team Of Researchers" containing two buttons: "Our Founders" and "Our Employees". Red arrows labeled "LANDMARKS" point to the "Services", "Areas", and "Team" links in the navigation bar. Red arrows labeled "STRUCTURAL LINKS" point to the "Our Founders" and "Our Employees" buttons.
- Top Right:** A section titled "Our Founders" featuring a circular profile picture of Alvise Biffi. Below the picture is his name and a brief bio: "Alvise Biffi is Chief Executive Officer of Secure Network, which he founded together with Stefano Zanero in 2004. Alvise is actively in charge of business ...". A "Discover" button is present. A red arrow labeled "GROUP LINK" points from the "Discover" button to the "Our Founders" title.
- Middle Left:** A screenshot of the "Who We Are" section. It contains a paragraph about the company's mission and a list of achievements. Red arrows labeled "STRUCTURAL LINK" point to the "About" and "Contacts" links in the navigation bar at the bottom.
- Middle Right:** A section titled "Our Employees" featuring three circular profile pictures: Alberto Volpatto, Alex Conti, and Andrea Jegher. Each profile has a "Discover" button below it. Red arrows labeled "GROUP LINK" point from the "Discover" buttons to the employee names.
- Bottom:** A screenshot of a "We Are Hiring!" section. It includes a "Contact Us" button and social media icons. Red arrows labeled "TRANSITIONAL LINK" point to the "Contact Us" button, "STRUCTURAL LINK" points to the "About" link in the navigation bar, and "CONTACT LINK (social)" points to the social media icons.

Figure 6.17: Commented screenshots for the Team page.

### 6.2.9 Group: Resources

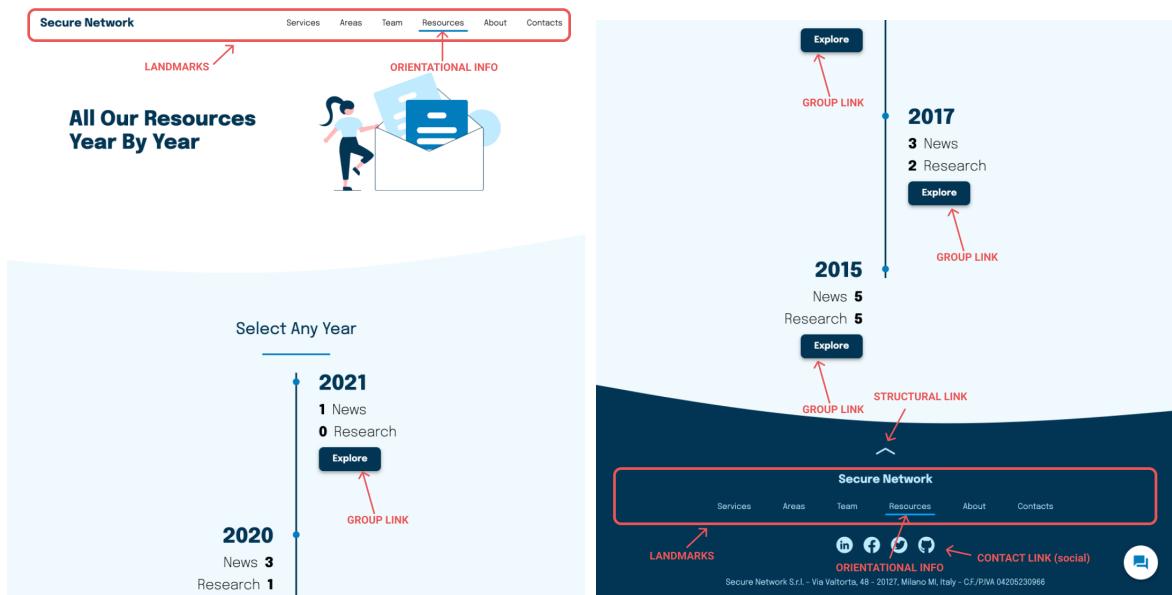


Figure 6.18: Commented screenshots for the Resources page.

# Interaction Scenarios

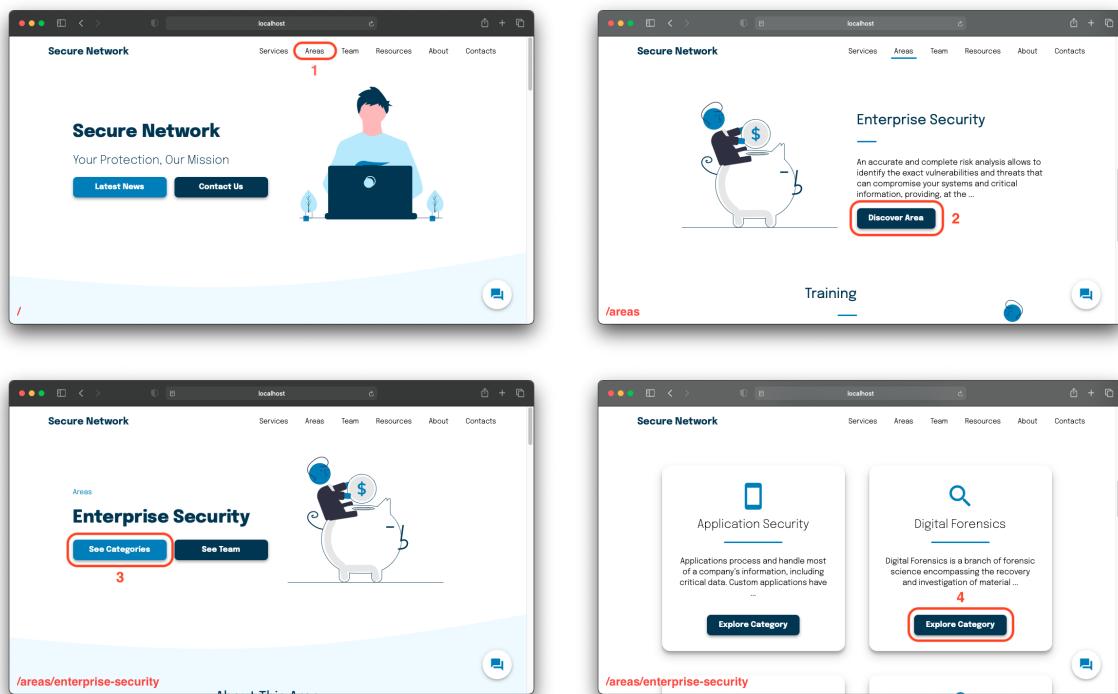
## 7.1 Scenario 1

An attorney from the Milan prosecutor's office is looking for a company able to retrieve evidence from a device linked to a court case.

She got the name of Secure Network and would like to find out if they can perform the job she is looking for and, in case, get a quote. To do so, she connects to the company website.

She directly goes to the *Areas* page and, after reading the short abstracts, she chooses to visit the page of the *Enterprise Security* area. There, she clicks on *See Categories* and examines the list that is shown to her.

Among the options, she selects the *Digital Forensics* category and, in the page that opens, she finds *Forensics Acquisition* that seems to be exactly the service she needs. After opening the page to confirm her assumptions, she browses to the *Contacts* page to send them an email.



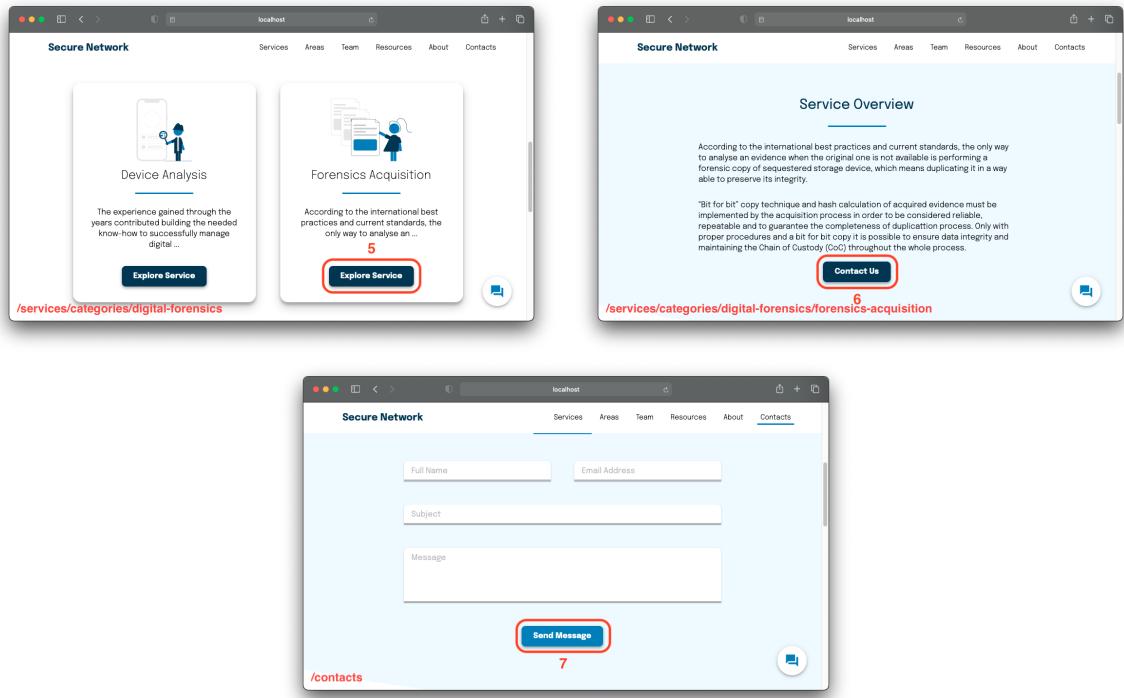


Figure 7.1: Screenshots describing interactive scenario 1.

## 7.2 Scenario 2

A recent graduate of the Politecnico is looking for his first job in the computer security field. A few days ago, he attended a workshop given by Alvise Biffi in which he mentioned that the company he founded is hiring but unfortunately he does not remember the name.

He thinks it is called Secure Network but, to be completely sure, he connects to their website and goes to the *Team* page where he finds *Alvise Biffi*. After reading the founder's biography abstract and decides to visit his page to have a complete reading.

After that, he goes back to the *Team* page (using the breadcrumbs on top of the page) to give another look to the employee list and there he finds the *We are hiring* title and clicks on the *Contact Us* button.

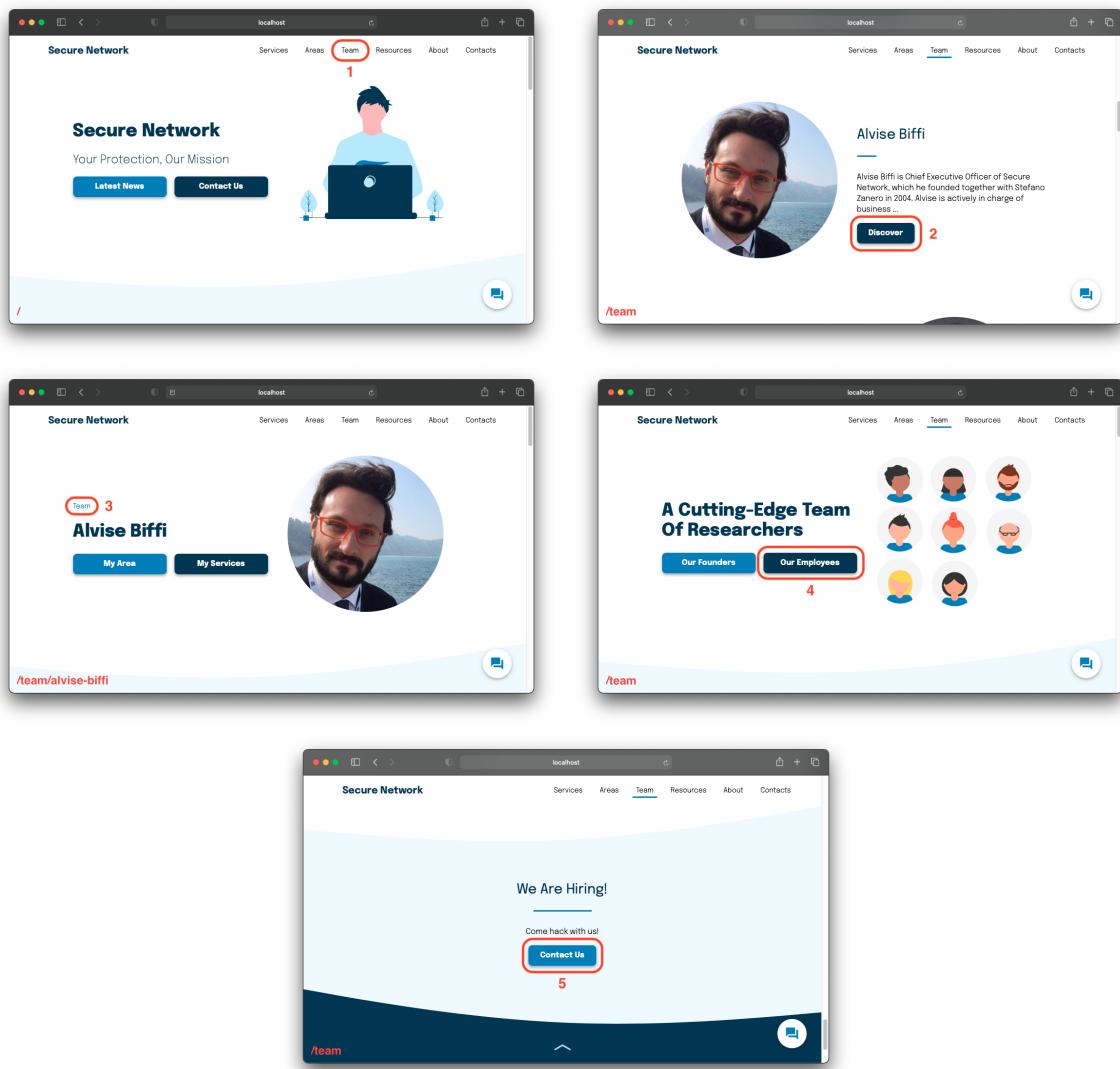


Figure 7.2: Screenshots describing interactive scenario 2.

## 7.3 Scenario 3

During a conference, an entrepreneur came in contact with this security company from Milan that is called Secure Network. He is impressed with what he heard about them and would like to discover what they do more in depth.

After connecting to the website, he browses the *Home* page and reads the description of the company. He decides to click the *About Us* button and in that page he discovers more about their history.

There, he finds a section where the company gives some reason why cybersecurity matters and decides to give a look to the *Services* they offer. He only wants to have an overview, so he decides to click on the *Group by Category* button in order to have a look at that list.

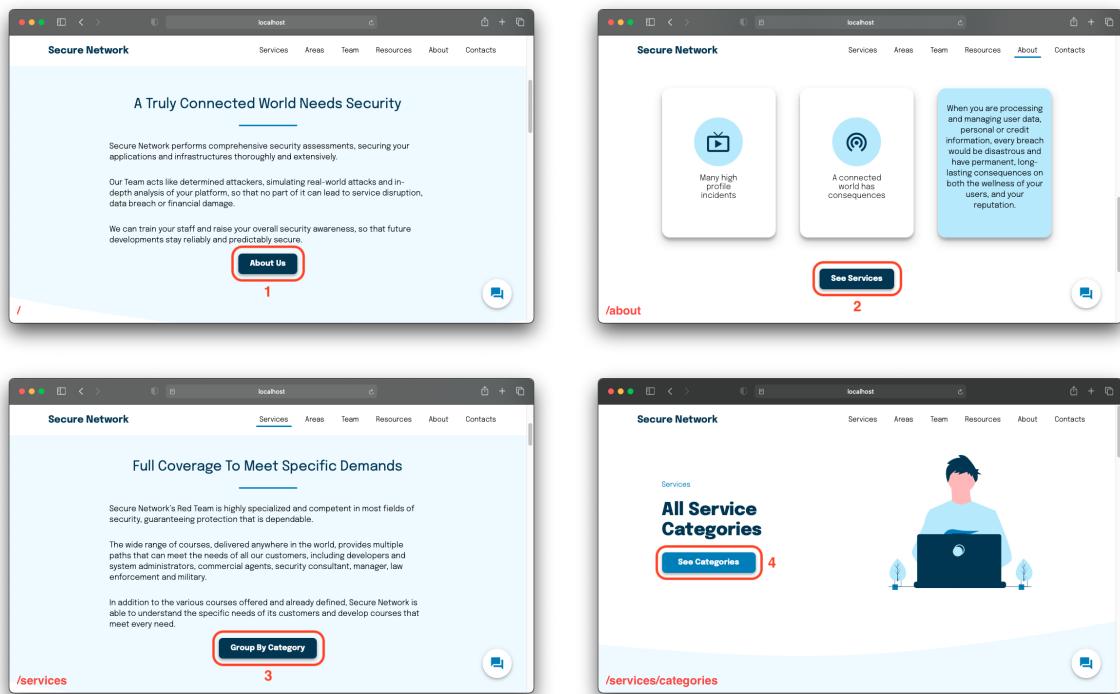


Figure 7.3: Screenshots describing interactive scenario 3.

## 7.4 Scenario 4

During a lecture of his course of Computer Security at Politecnico, professor Stefano Zanero mentioned an interview with him published in 2017. One of his students would really like to read it so she visits to the website of his company, Secure Network, as he told her to do. Right on the *Home* page, she finds some of the latest news and she spots one about his professor that she wants to read. After reading that article, she goes back to the *Resources* page using the breadcrumbs on top and she selects the year *2017*.

Once on the year page, she filters the resources to see only the news and then she finds the interview that she was looking for.

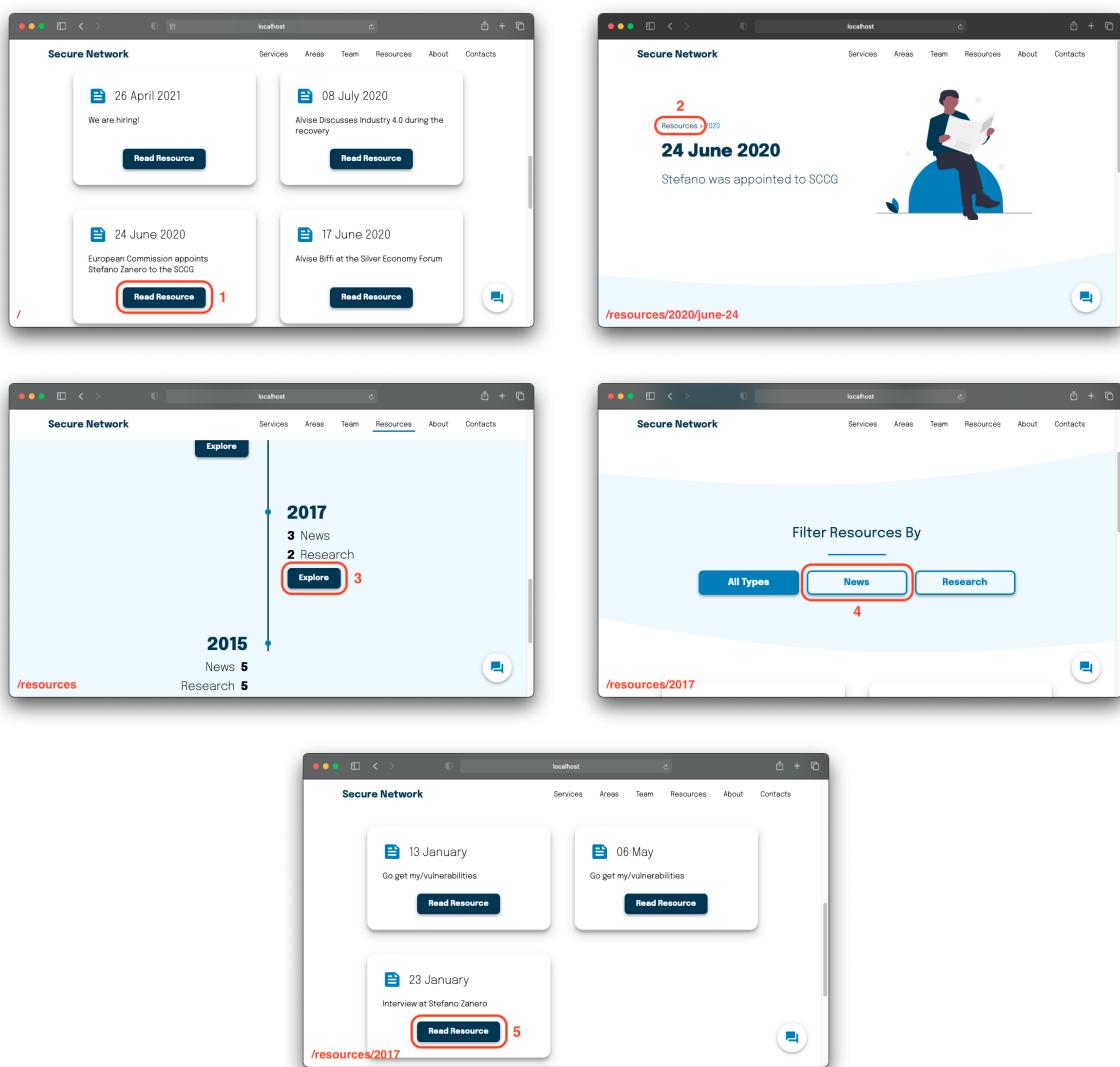


Figure 7.4: Screenshots describing interactive scenario 4.

# DB Design

In this last chapter we report the structure of the database designed to support the website and manage the information contained in it. We started with the conceptual design, by which is possible to identify the first layer of abstraction of our data. It has been modelled with the *Entity-Relationship diagram*.

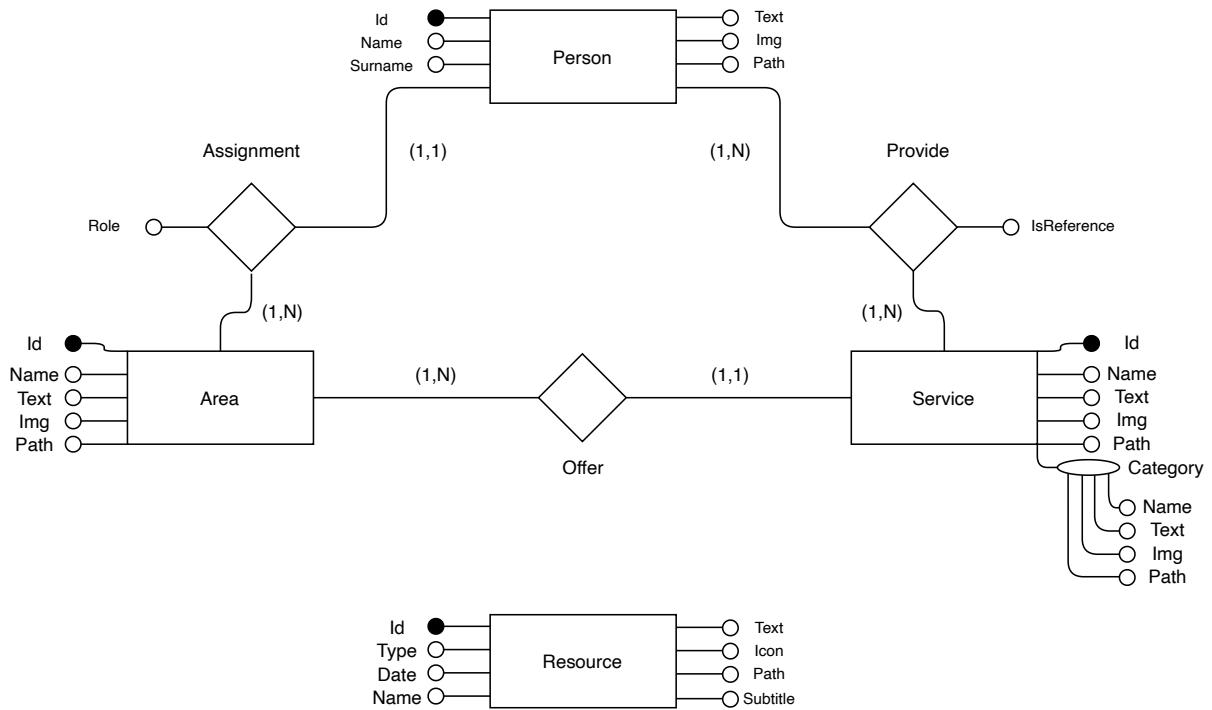


Figure 8.1: ER Diagram

Then we proceed with the logic design, which allow to better describe the *E-R Model*. Some additional tables have been identified to better support the implementation.

- **Area.** An *Area* is identified by an **id**, has a **name**, a **text** description, a string path to the image, **img**, and a **path** to reach the specific page.
- **Person.** A *Person* is identified by an **id**, has a **name**, a **surname**, a **text** description, a string path to the image, **img**, a **path** to reach the specific page. In addition, the relation called *Assignment*, among *Person* and *Area*, has been merged within the first table, resulting in the addition of two fields: the **area\_id** as foreign key and the **role** of the person within the area. Each *Person* is assigned to exactly one *Area*, whereas in each *Area* several *People* are assigned.
- **Service\_Category.** This table was born due to normalization purposes. It would have been redundant adding for each *Service* information about the complex attribute *Category*. To avoid replication, we decided to perform this normalization procedure. A *Service\_Category* is identified by an **id**, has a **name**, a **text** description, a string path to the image, **img**, and a **path** to reach the specific page.
- **Service.** A *Service* is identified by an **id**, has a **name**, a **text** description, a string path to the image, **img**, a **path** to reach the specific page. The **category\_id** is the foreign key, used to support the normalization process described in the previous table. Each *Service* is mapped with exactly one *Service\_Category*, whereas each *Service\_Category* is mapped with several *Services*. In addition, the relation called *Offer*, among *Service* and *Area*, has been merged within the first table, resulting in the addition of the field **area\_id** as foreign key. Each *Service* is offered by exactly one *Area*, whereas each *Area* offers several *Services*.
- **Person\_Service.** This table was born to support the *N-N* relation, *Provide*, among *Person* and *Service*. A *Person\_Service* is identified by an autoincremental **id** and presents a boolean field, **isReference**, which states whether or not the *Person*, identified by the foreign key **person\_id**, is the reference for the *Service*, identified by the foreign key **service\_id**.
- **Resource.** A *Resource* is identified by an **id**, has a **type**, a **name**, a **date**, a **text** description, a **subtitle** a string path to the **icon**, and a **path** to reach the specific page.

Area		Person		Reesource	
<b>PK</b>	<b>Id</b>	<b>PK</b>	<b>Id</b>	<b>PK</b>	<b>Id</b>
	Name		Name		Type
	Text		Surname		Date
	Img		Text		Name
	Path		Img		Text
			Path		Path
			Role		Icon
		<b>FK</b>	Area_id		Subtitle

Service		Service_Category		Person_Service	
<b>PK</b>	<b>Id</b>	<b>PK</b>	<b>Id</b>	<b>PK</b>	<b>Id</b>
	Name		Name		IsReference
	Text		Text		Person_id
	Img		Img		Service_id
	Path		Path		
<b>FK</b>	Category_id				
<b>FK</b>	Area_id				

Figure 8.2: Relational Tables

# List of Figures

2.1	C-IDM Diagram . . . . .	4
3.1	Content tables (C-IDM in the small) . . . . .	6
4.1	Pages mapping . . . . .	9
5.1	P-IDM Diagram . . . . .	10
6.1	Commented wireframes for the Home page. . . . .	11
6.2	Commented wireframes for the Contacts page. . . . .	12
6.3	Commented wireframes for the Area page. . . . .	13
6.4	Commented wireframes for the Person page. . . . .	14
6.5	Commented wireframes for the Service page. . . . .	15
6.6	Commented wireframes for the Resources page. . . . .	15
6.7	Commented wireframes for the Areas page. . . . .	16
6.8	Commented wireframes for the Team page. . . . .	17
6.9	Commented wireframes for the Resources page. . . . .	18
6.10	Commented screenshots for the Home page. . . . .	19
6.11	Commented screenshots for the Contacts page. . . . .	20
6.12	Commented screenshots for the Area page. . . . .	21
6.13	Commented screenshots for the Person page. . . . .	22
6.14	Commented screenshots for the Service page. . . . .	23
6.15	Commented screenshots for the Resources page. . . . .	24
6.16	Commented screenshots for the Areas page. . . . .	24
6.17	Commented screenshots for the Team page. . . . .	25
6.18	Commented screenshots for the Resources page. . . . .	26
7.1	Screenshots describing interactive scenario 1. . . . .	28
7.2	Screenshots describing interactive scenario 2. . . . .	29
7.3	Screenshots describing interactive scenario 3. . . . .	30
7.4	Screenshots describing interactive scenario 4. . . . .	31
8.1	ER Diagram . . . . .	32
8.2	Relational Tables . . . . .	34