



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

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

June 6, 2021

Contents

1 Abstract	3
2 C-IDM Diagram	4
3 Content tables	5
4 Mapping Content Tables into Pages	7
5 P-IDM diagram	10
6 Visual Design	11
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: Article	15
6.1.7 Group: Areas	16
6.1.8 Group: Team	17
6.1.9 Group: Articles	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: Article	24
6.2.7 Group: Areas	24
6.2.8 Group: Team	25
6.2.9 Group: Articles	26
7 Interaction Scenarios	27
7.1 Scenario 1	27
7.2 Scenario 2	29
7.3 Scenario 3	30

7.4	Scenario 4	31
8	DB Design	33

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.

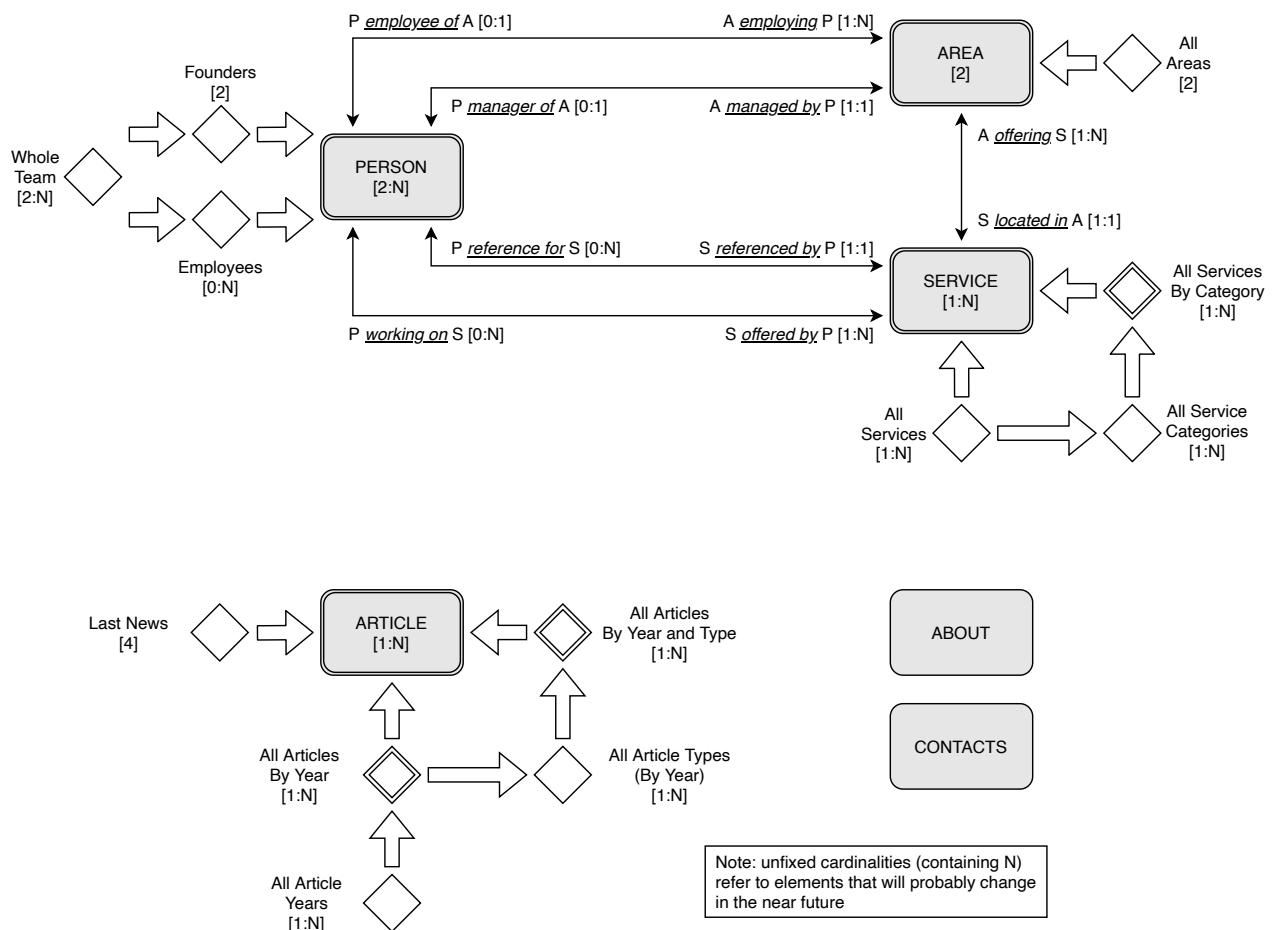


Figure 2.1: C-IDM Diagram

Content tables

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

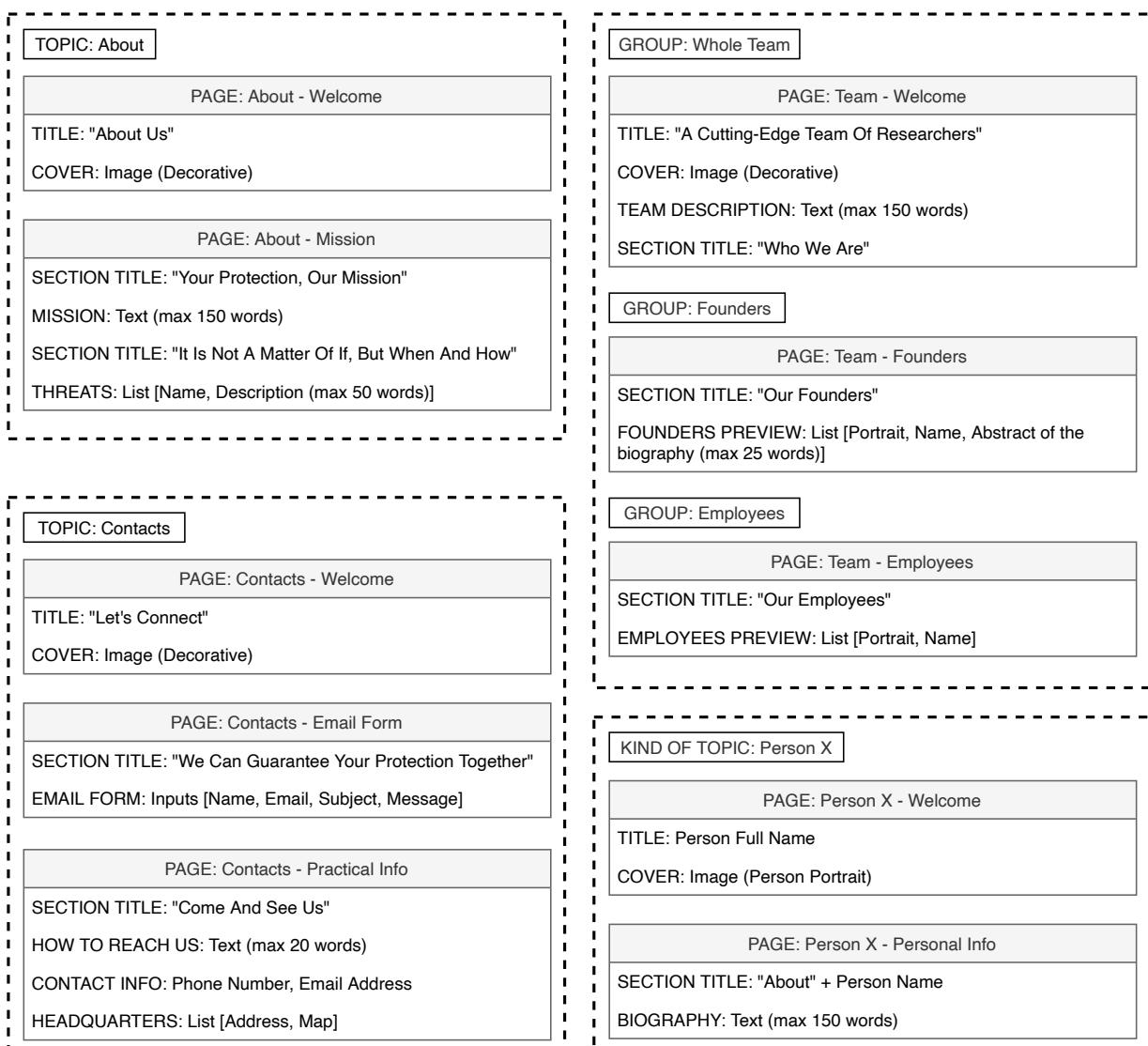
<p>TOPIC: Contacts</p> <p>TITLE: "Let's Connect"</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "We Can Guarantee Your Protection Together"</p> <p>EMAIL FORM: Inputs [Name, Email, Subject, Message]</p> <p>SECTION TITLE: "Come And See Us"</p> <p>HOW TO REACH US: Text (max 20 words)</p> <p>CONTACT INFO: Phone Number, Email Address</p> <p>HEADQUARTERS: List [Address, Map]</p>	<p>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>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: 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>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: Employees</p> <p>SECTION TITLE: "Our Employees"</p> <p>EMPLOYEES PREVIEW: List [Portrait, Name]</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>

KIND OF TOPIC: Service X	GROUP: All Services
<p>TITLE: Service Name</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "Service Overview"</p> <p>DESCRIPTION: Text (max 150 words)</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>
GROUP: All Service Categories	MULTIPLE GROUP: All Services by Category X
<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>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>
GROUP: All Article Years	MULTIPLE GROUP: All Articles by Year X and Type Y
<p>TITLE: "All Our Articles Year By Year"</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: "Select Any Year"</p> <p>YEARS PREVIEW: List [Year, List [Number of articles for each type, Type of article]]]</p>	<p>TITLE: "All Articles Of" + Year</p> <p>COVER: Image (Decorative)</p> <p>ARTICLES PREVIEW: List [Date, Subtitle (max 15 words)]</p>
MULTIPLE GROUP: All Articles by Year X	KIND OF TOPIC: Article X
<p>TITLE: "All Articles Of" + Year</p> <p>COVER: Image (Decorative)</p> <p>ARTICLES PREVIEW: List [Date, Subtitle (max 15 words)]</p>	<p>TITLE: Article Date</p> <p>SUBTITLE: Article Title (max 10 words)</p> <p>COVER: Image (Decorative)</p> <p>SECTION TITLE: Article Subtitle (max 15 words)</p> <p>ARTICLE: Text (max 150 words + external links)</p>
GROUP: All Article Types by Year X	GROUP: Last News
<p>SECTION TITLE: "Filter Articles By"</p> <p>FILTERS: All articles, List [Type of Article]</p>	ARTICLES PREVIEW: List [Date, Subtitle (max 15 words)]

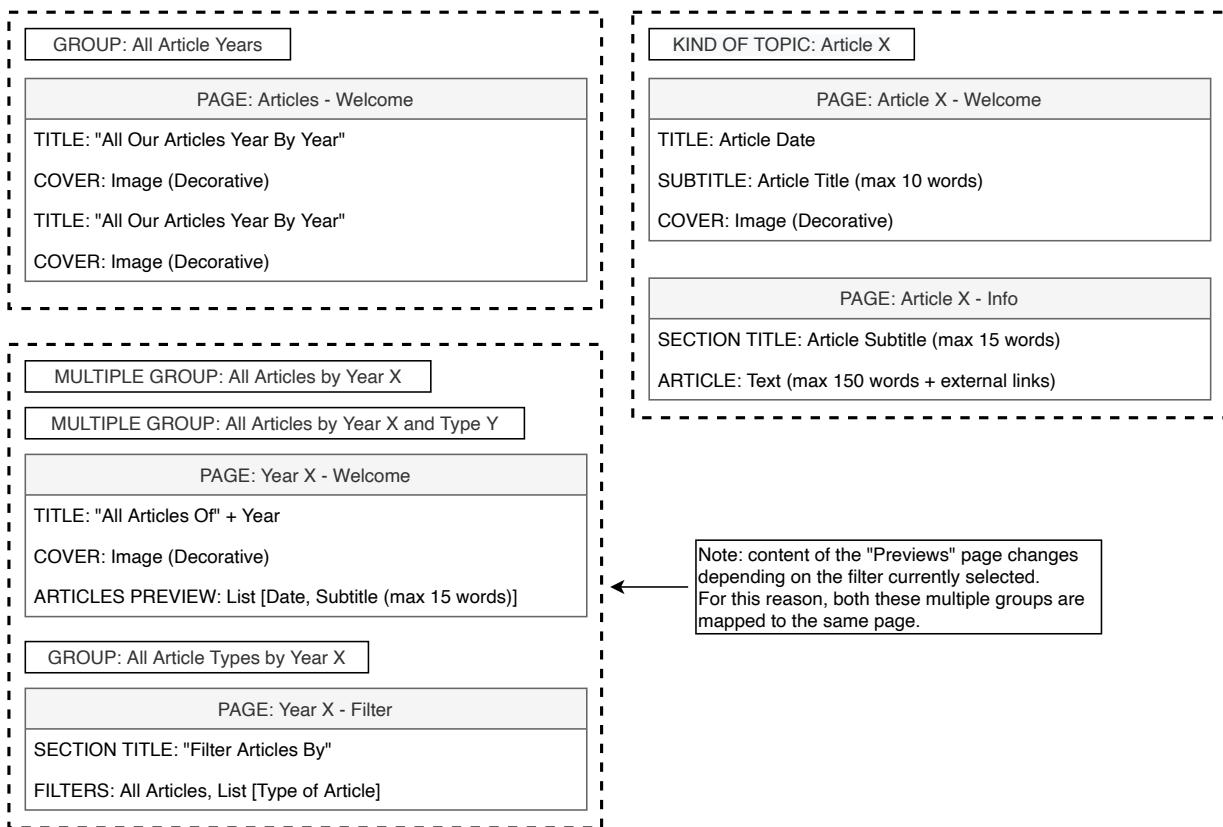
Figure 3.1: Content tables (C-IDM in the small)

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>AREAS PREVIEW: List [Image, Name, Abstract of Description (max 25 words)]</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>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>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>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>GROUP: All Services</p> <p>PAGE: Services - Welcome</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>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>



P-IDM diagram

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

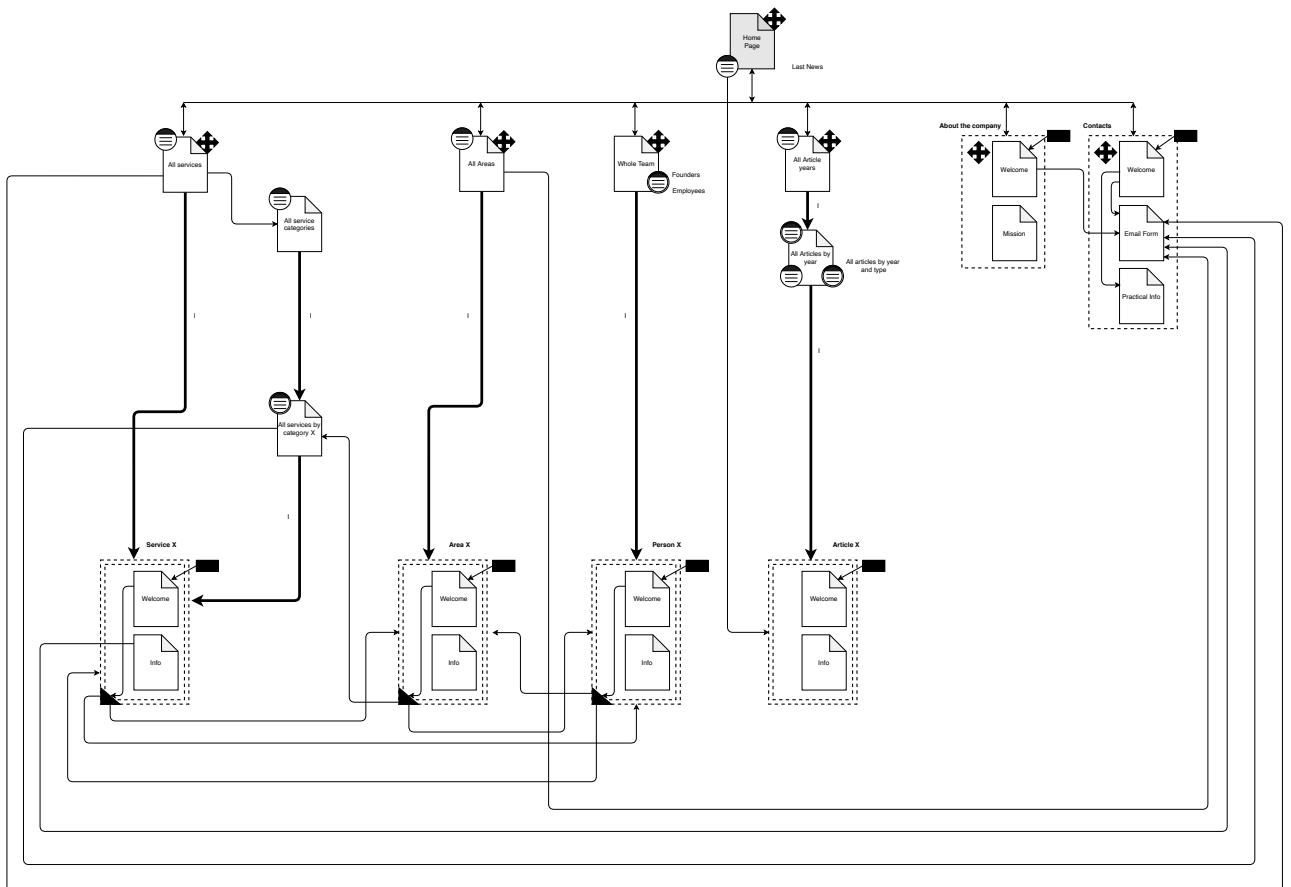


Figure 5.1: P-IDM Diagram

Visual Design

6.1 Low-Fidelity Wireframes

6.1.1 Home Page

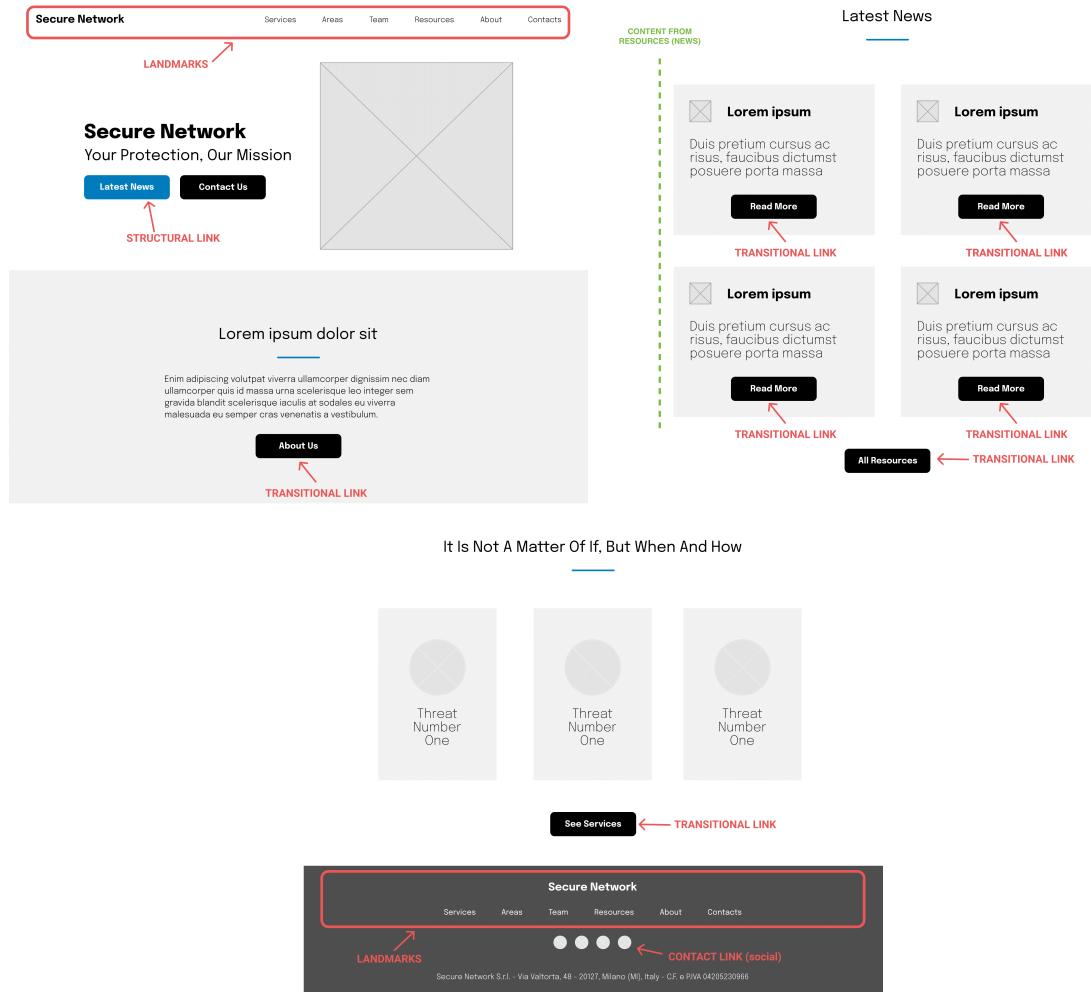


Figure 6.1: Commented wireframes for the Home page.

6.1.2 Topic: Contacts

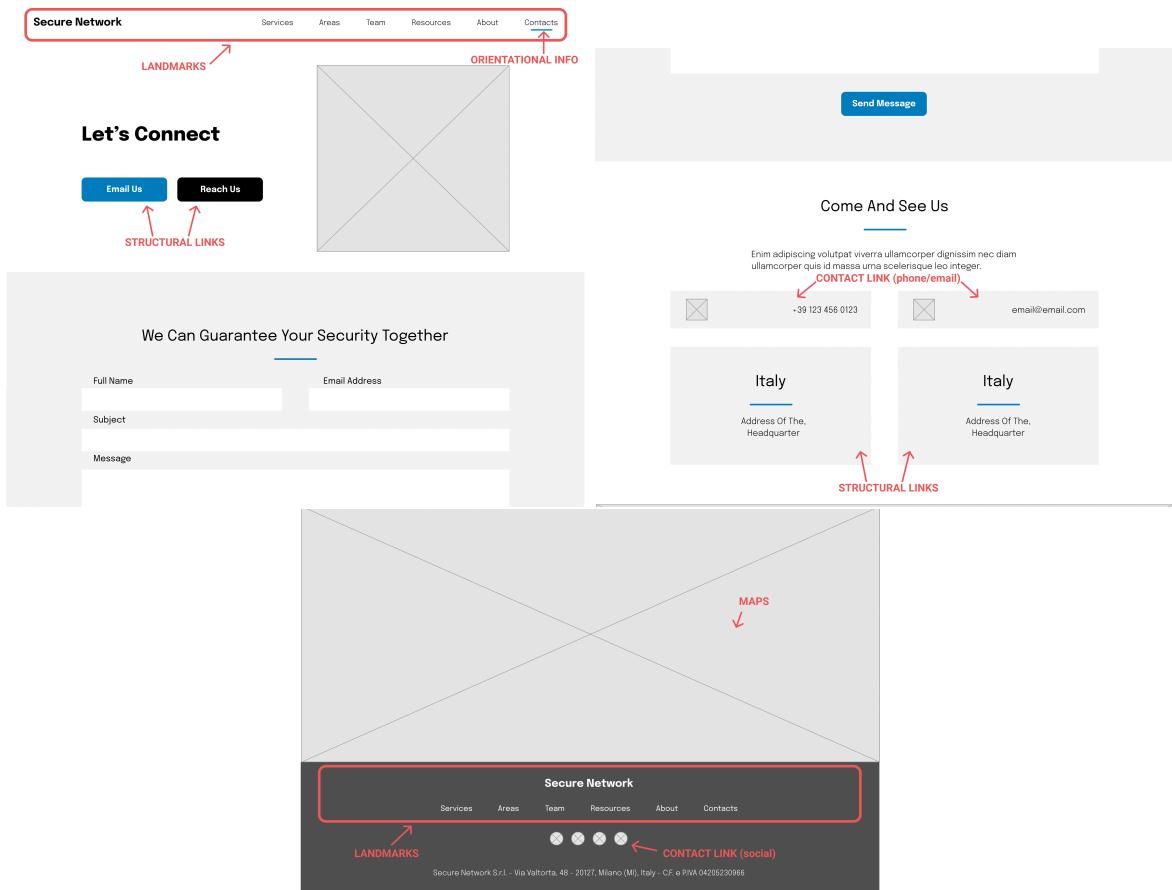


Figure 6.2: Commented wireframes for the Contacts page.

6.1.3 Kind of Topic: Area

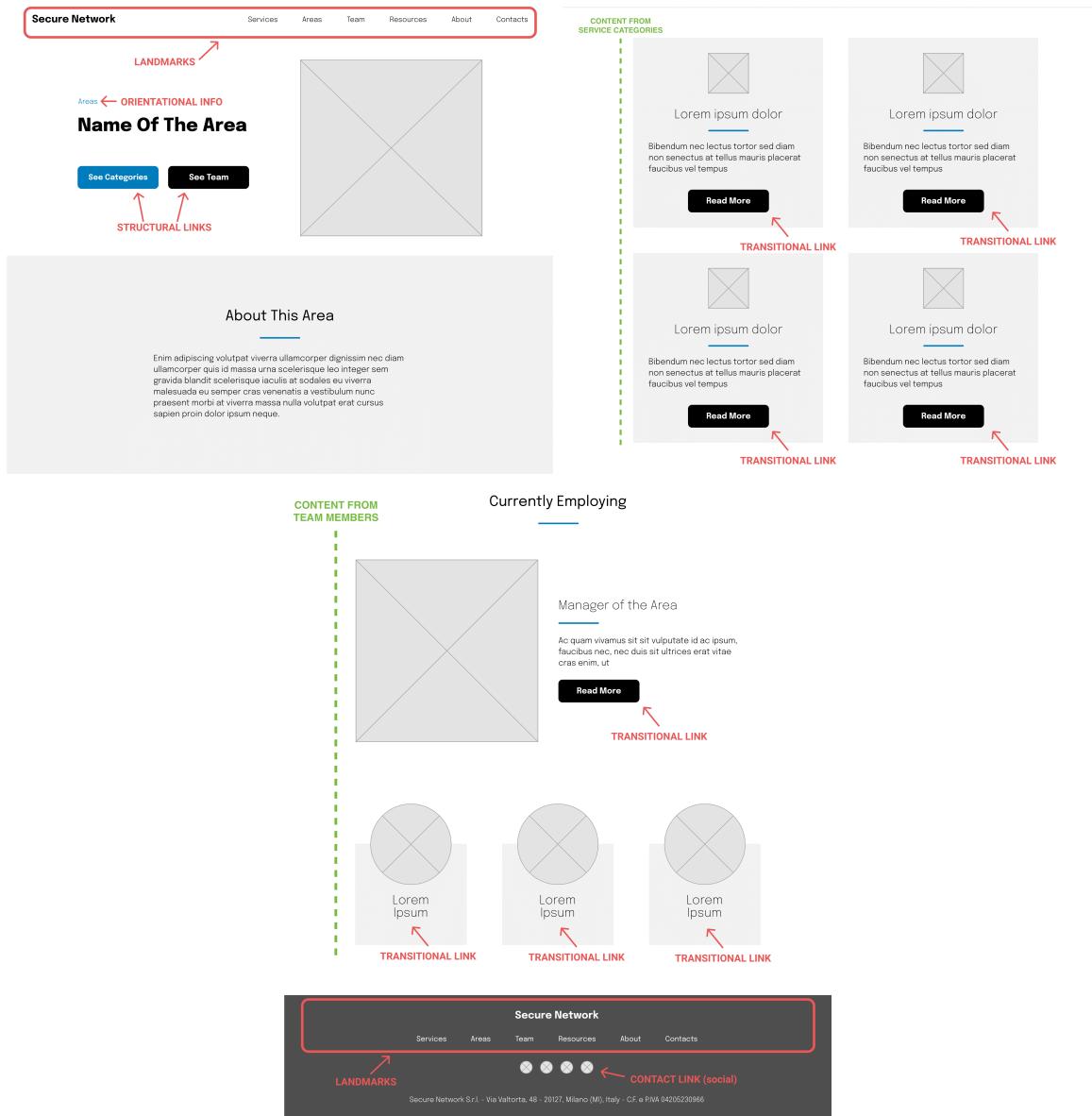


Figure 6.3: Commented wireframes for the Area page.

6.1.4 Kind of Topic: Person

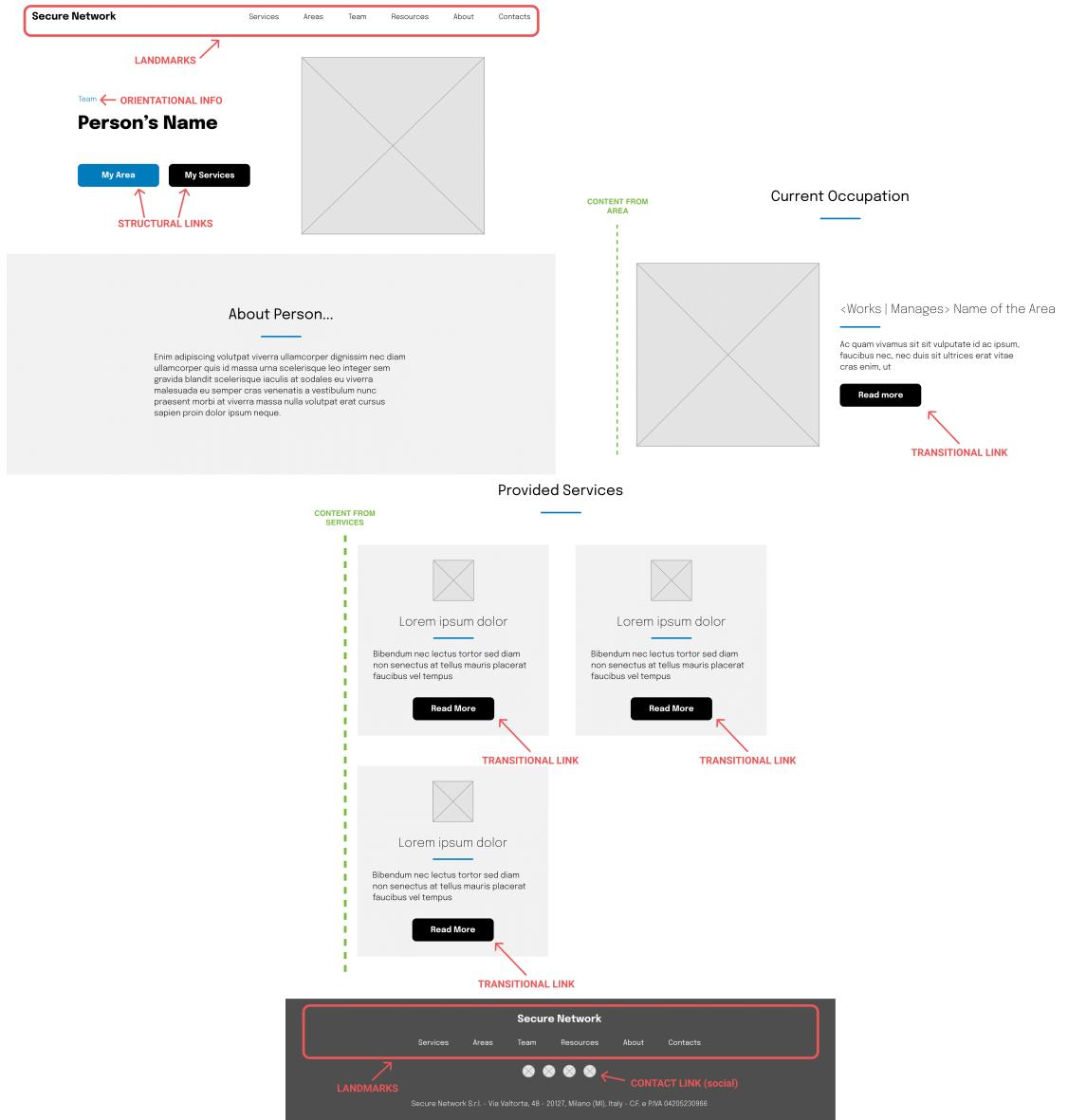


Figure 6.4: Commented wireframes for the Person page.

6.1.5 Kind of Topic: Service

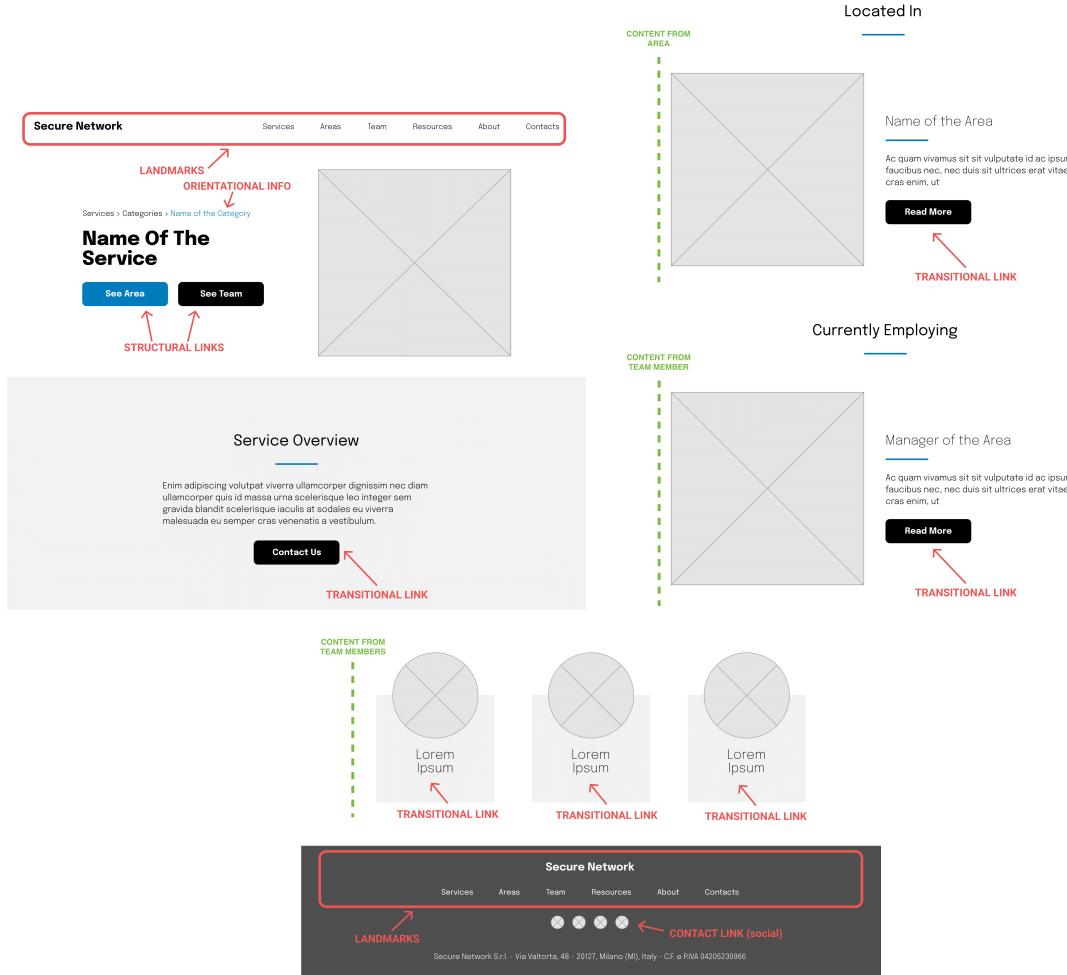


Figure 6.5: Commented wireframes for the Service page.

6.1.6 Kind of Topic: Article

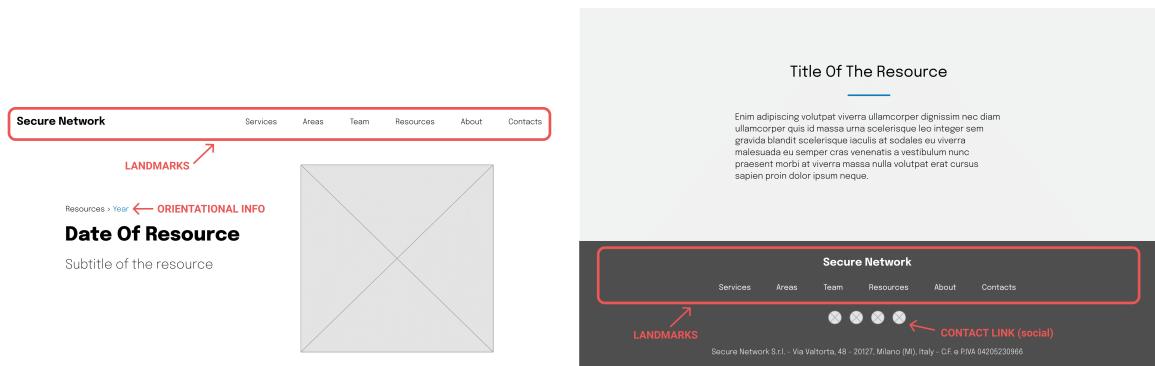


Figure 6.6: Commented wireframes for the Articles page.

6.1.7 Group: Areas

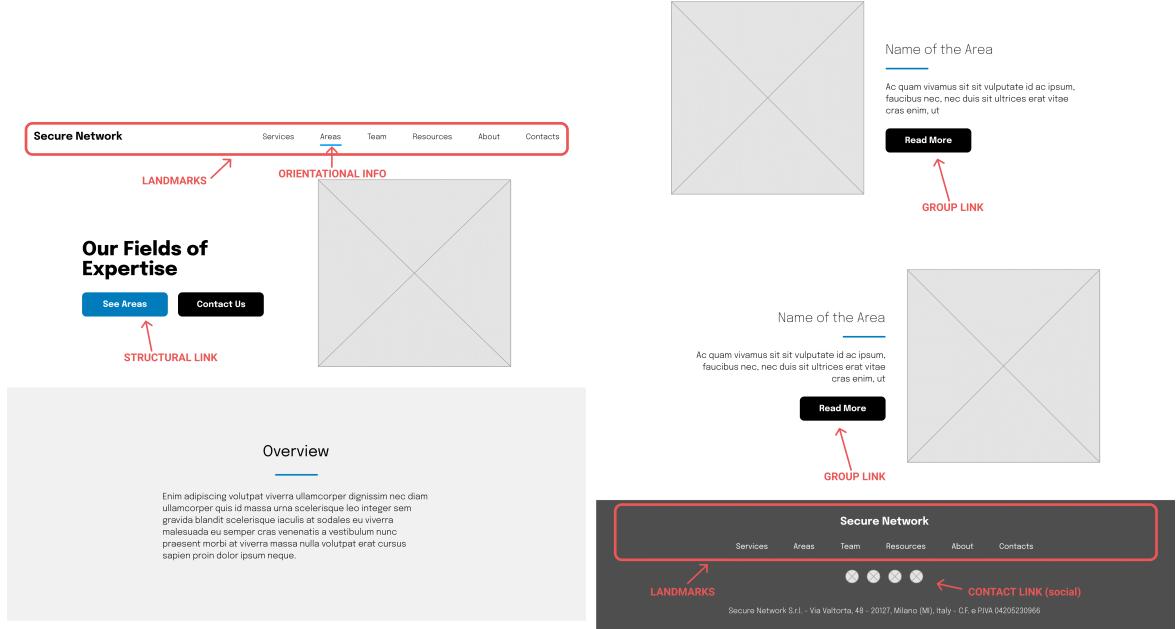


Figure 6.7: Commented wireframes for the Areas page.

6.1.8 Group: Team

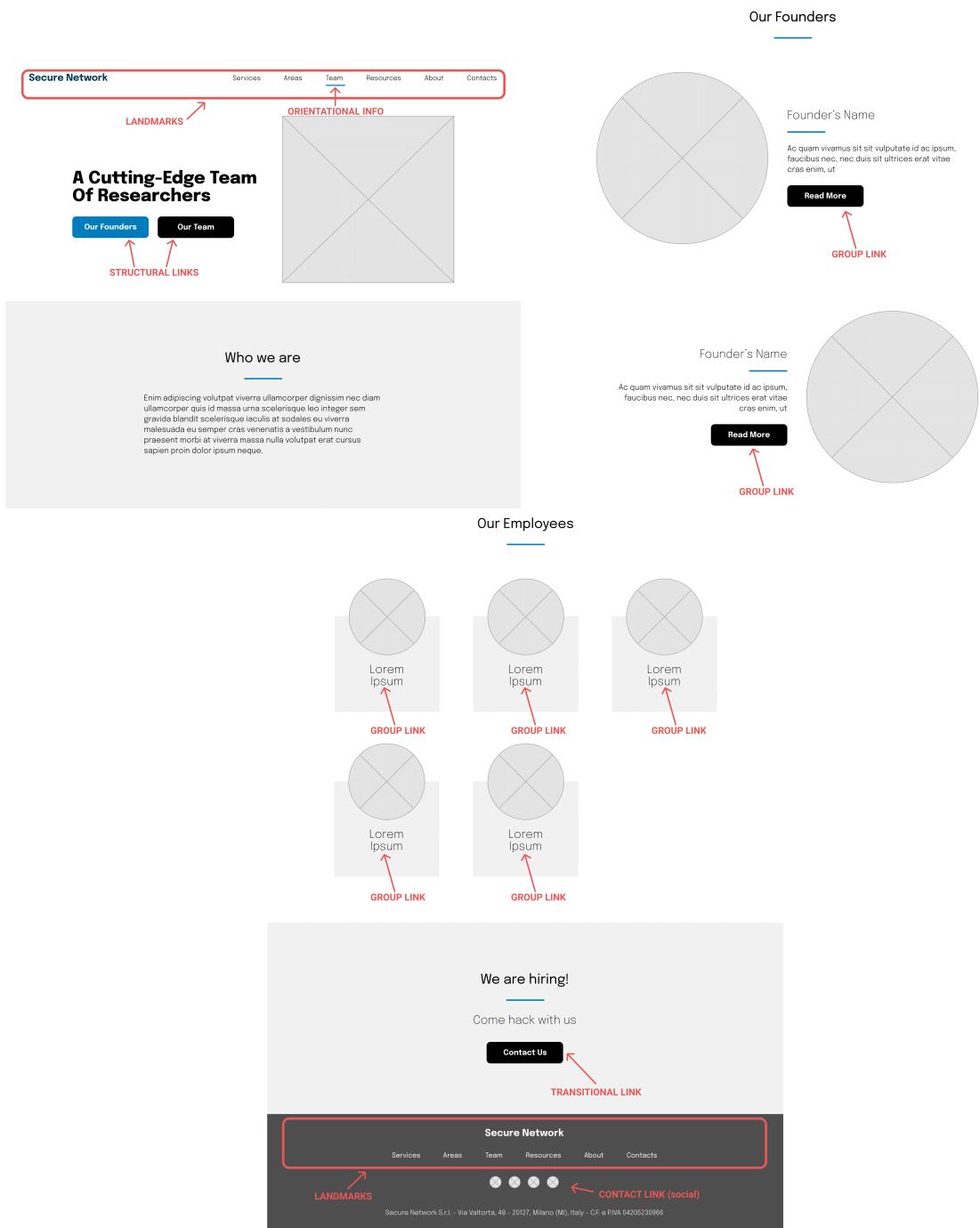


Figure 6.8: Commented wireframes for the Team page.

6.1.9 Group: Articles

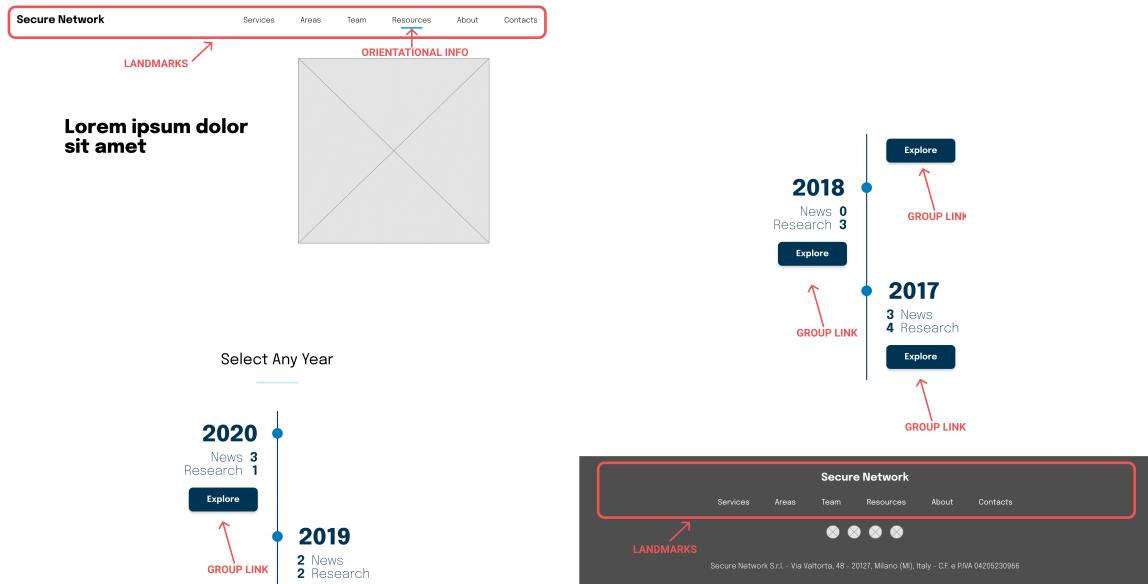


Figure 6.9: Commented wireframes for the Articles page.

6.2 High-Fidelity Screenshots

6.2.1 Home Page



Figure 6.10: Commented screenshots for the Home page.

6.2.2 Topic: Contacts

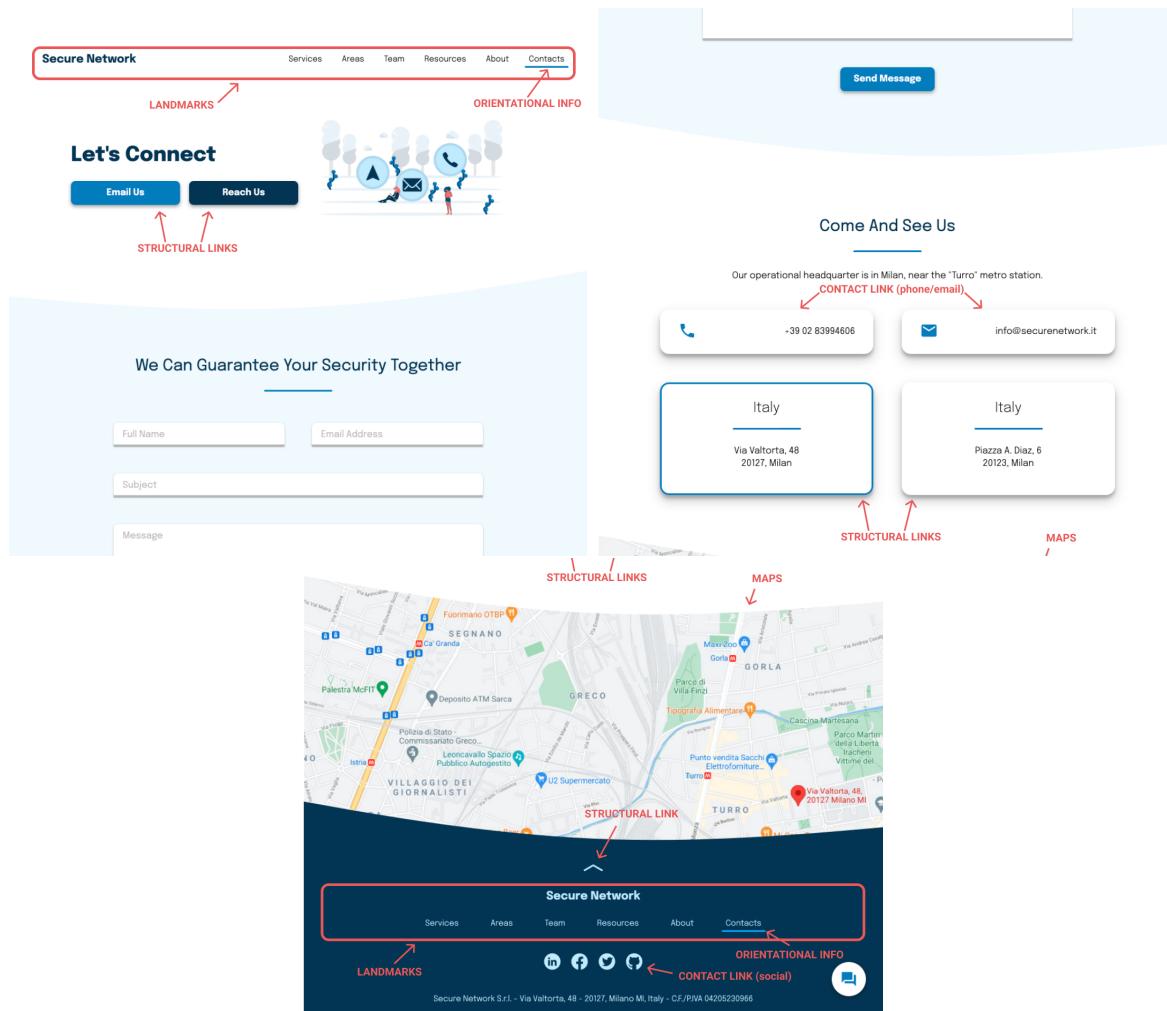


Figure 6.11: Commented screenshots for the Contacts page.

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 navigation bar with 'Secure Network' and links to Services, Areas, Team, Resources, About, and Contacts. Below the navigation is a section titled 'Training' with 'See Categories' and 'See Team' buttons. A blue icon of a person sitting at a desk is displayed. Red arrows point from the 'LANDMARKS' label to the 'See Categories' and 'See Team' buttons, and from the 'STRUCTURAL LINKS' label to the 'Areas' link in the navigation bar.
- Top Right Screenshot:** Titled 'Categories Of Services', it shows three cards: 'Binary Exploitation Training', 'Mobile Security Training', and 'Web Exploitation Training'. Each card has an 'Explore Category' button. Red arrows point from the 'CONTENT FROM SERVICE CATEGORIES' label to the first two cards, and from the 'TRANSITIONAL LINK' label to the 'Explore Category' buttons.
- Bottom Left Screenshot:** Titled 'Currently Employing', it shows a 'MANAGER' profile for Riccardo Cospite with a 'Discover' button. Below are profiles for Andrea Jegher, Diego Zaffaroni, and Enrico Coronese. Red arrows point from the 'CONTENT FROM TEAM MEMBERS' label to the 'Discover' button and from the 'TRANSITIONAL LINK' label to each of the three profiles.
- Bottom Right Screenshot:** Shows the footer of the 'Secure Network' page. It includes social media icons (LinkedIn, Facebook, Twitter, YouTube), a 'CONTACT LINK (social)' button, and the company's address: Secure Network S.r.l. - Via Veltorta, 48 - 20127, Milano MI, Italy - CF/PIVA 04205230966. A red arrow points from the 'STRUCTURAL LINK' label to the 'Areas' link in the footer navigation.

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

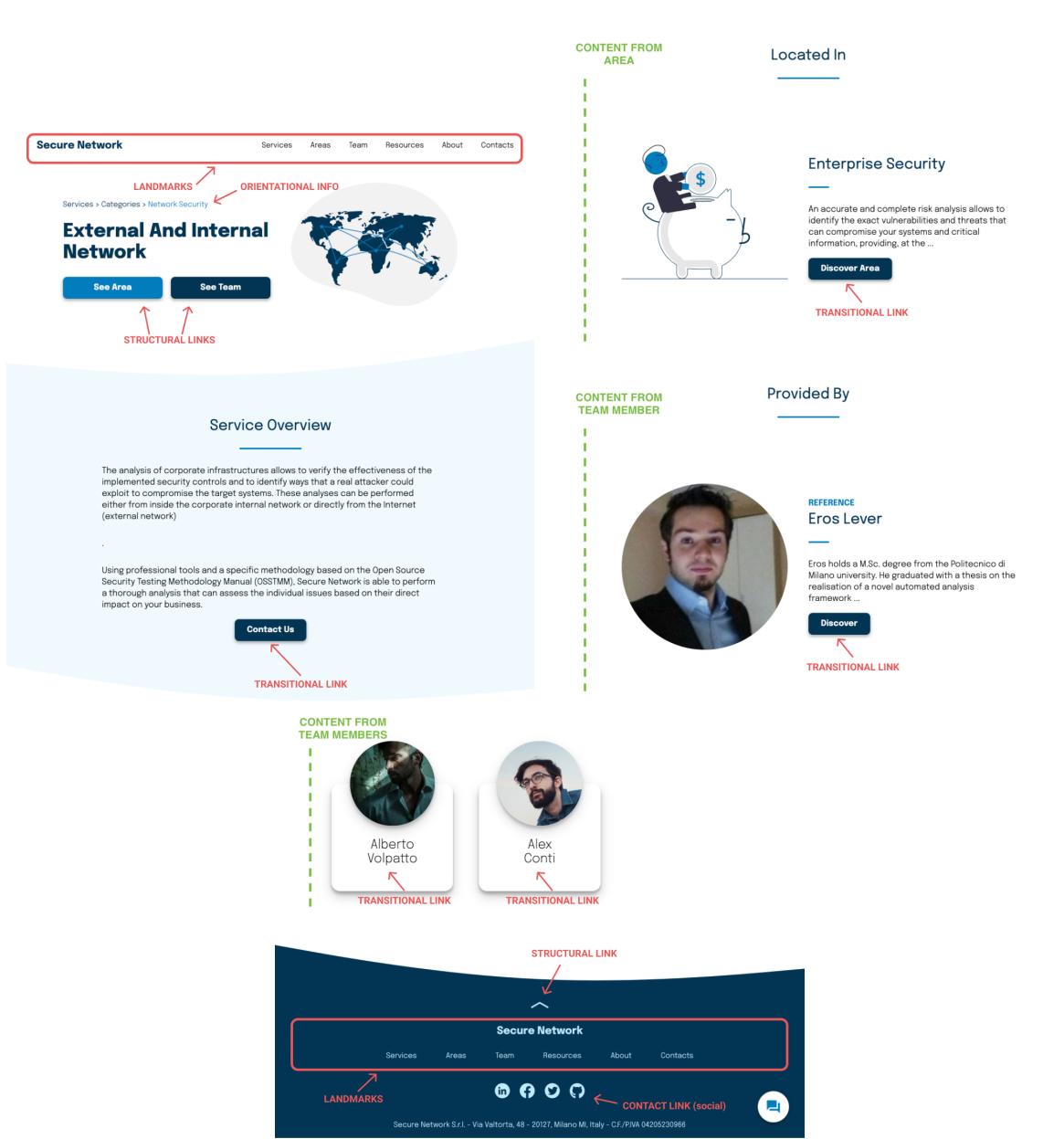


Figure 6.14: Commented screenshots for the Service page.

6.2.6 Kind of Topic: Article

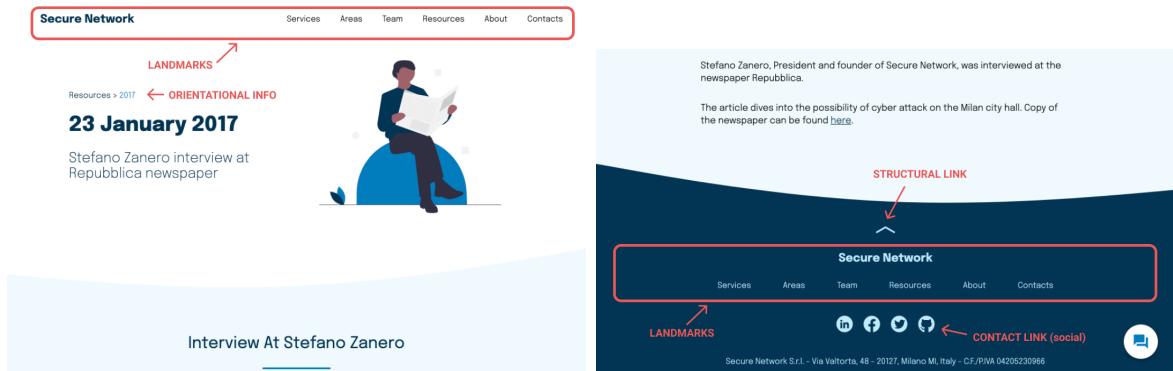


Figure 6.15: Commented screenshots for the Articles page.

6.2.7 Group: Areas

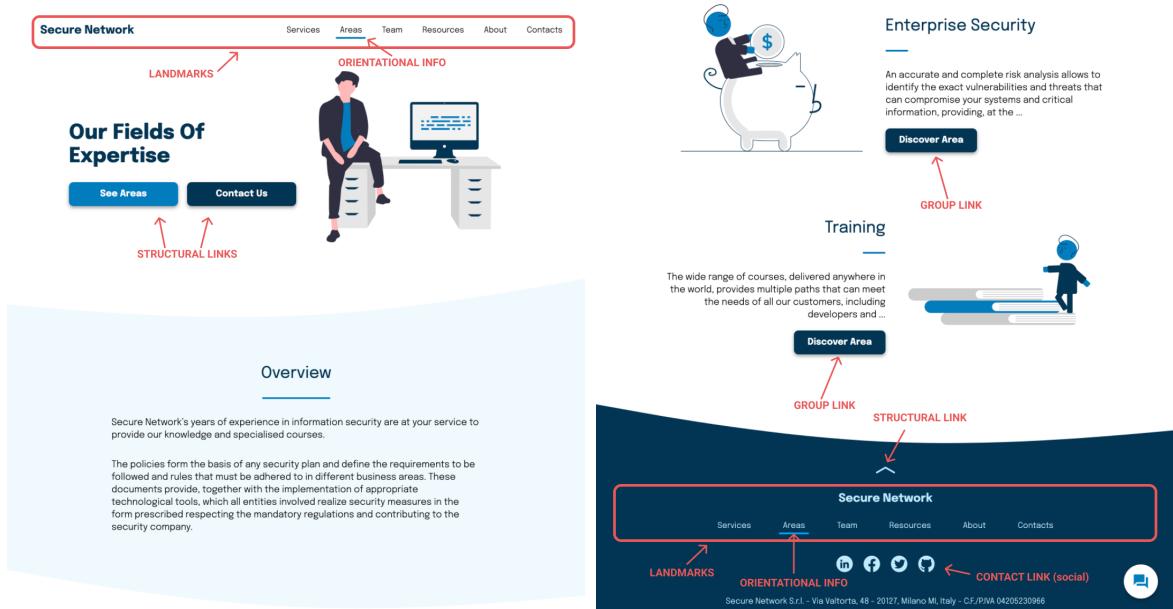


Figure 6.16: Commented screenshots for the Areas page.

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" header bar. Red annotations point to "LANDMARKS" (Services, Areas, Resources, About, Contacts) and "STRUCTURAL LINKS" (Our Founders, Our Employees). A red arrow points from the "Team" button in the header to the "ORIENTATIONAL INFO" section below.
- Top Right:** A section titled "Our Founders" featuring profiles for Alvise Biffi and Stefano Zanero. Each profile includes a "Discover" button and a "GROUP LINK" annotation pointing to the "Discover" button.
- Middle Left:** A section titled "Who We Are" containing text about the company's capabilities and history. It includes a "Contact Us" button and a "TRANITIONAL LINK" annotation pointing to it.
- Middle Right:** A section titled "Our Employees" featuring profiles for Alberto Volpatto, Alex Conti, and Andrea Jegher. Each profile includes a "Discover" button and a "GROUP LINK" annotation pointing to the "Discover" button.
- Bottom Center:** A section titled "We Are Hiring!" with a "Contact Us" button and a "CONTACT LINK (social)" annotation pointing to the social media icons at the bottom of the page.

Annotations in red arrows and text labels (e.g., LANDMARKS, STRUCTURAL LINKS, ORIENTATIONAL INFO, GROUP LINK, TRANITIONAL LINK, CONTACT LINK (social)) highlight specific design elements and their relationships within the page layout.

Figure 6.17: Commented screenshots for the Team page.

6.2.9 Group: Articles

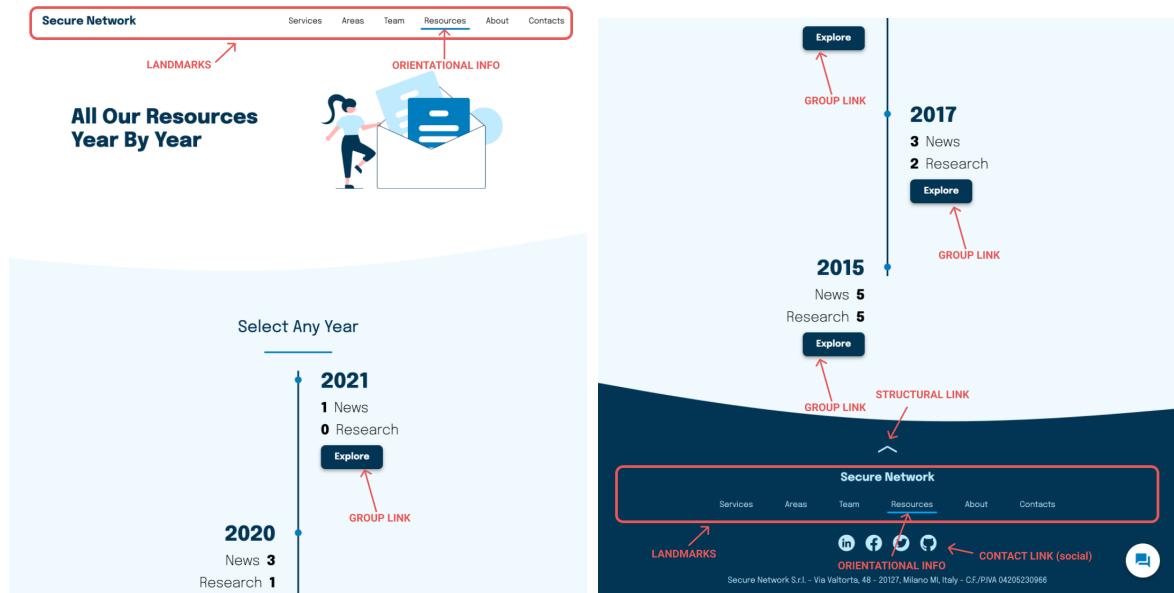


Figure 6.18: Commented screenshots for the Articles page.

Interaction Scenarios

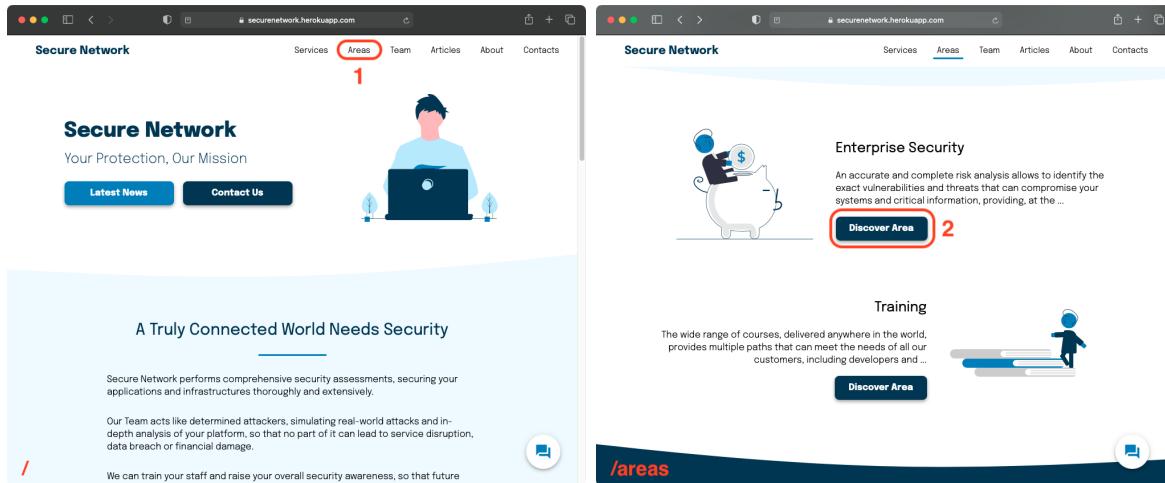
7.1 Scenario 1

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^[1] and, after reading the short abstracts, she chooses to visit the page of the *Enterprise Security* area^[2]. There, she clicks on *See Services*^[3] and examines the list that is shown to her.

Among the options, she finds the *Forensics Acquisition* service that seems to be exactly what she needs^[4]. After opening the page to confirm her assumptions, she browses to the *Contacts* page^[5] to send them an email^[6].



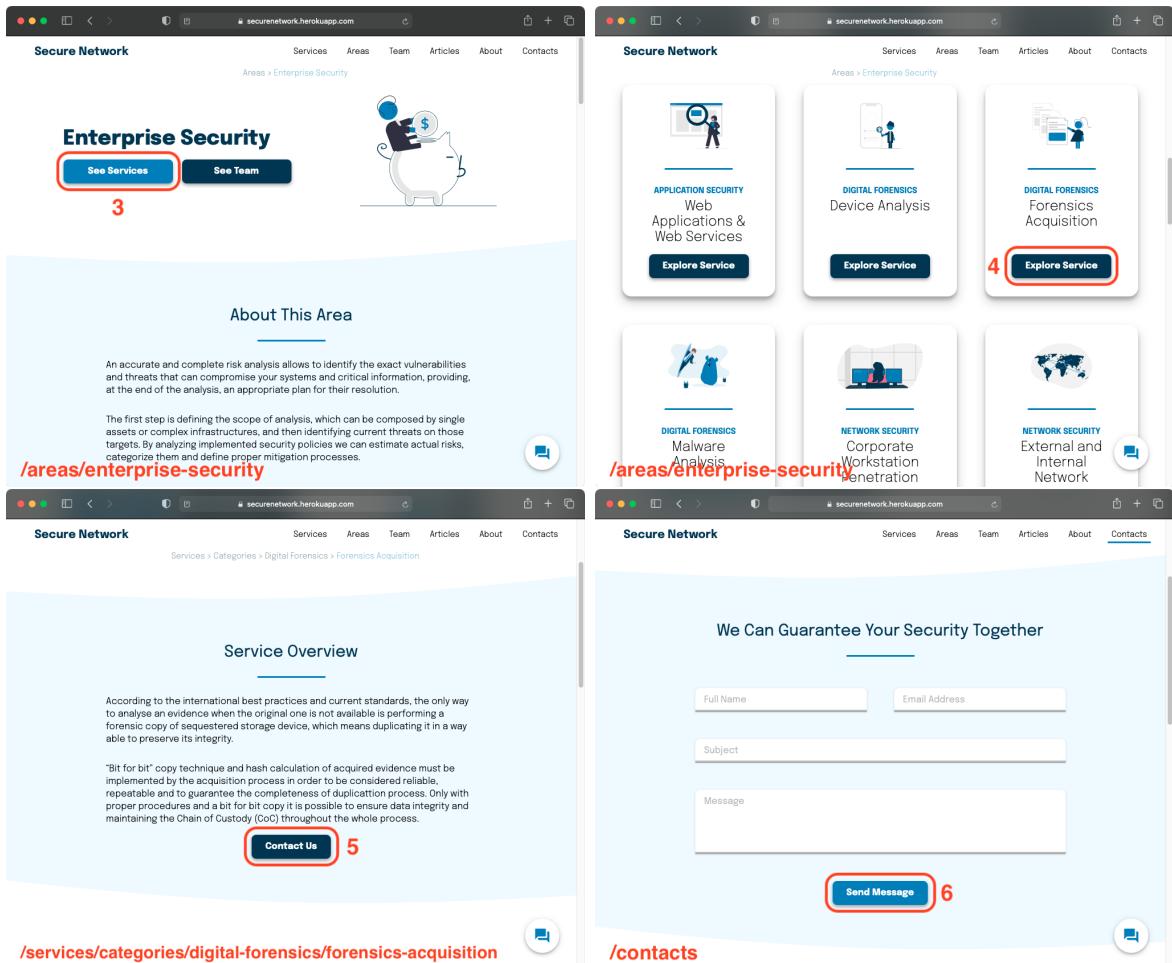


Figure 7.1: Screenshots describing interactive scenario 1.

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^[1] where he finds *Alvise Biffi*. After reading the founder's biography abstract and decides to visit his page to have a complete reading^[2].

After that, he goes back to the *Team* page^[3] (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^[4].

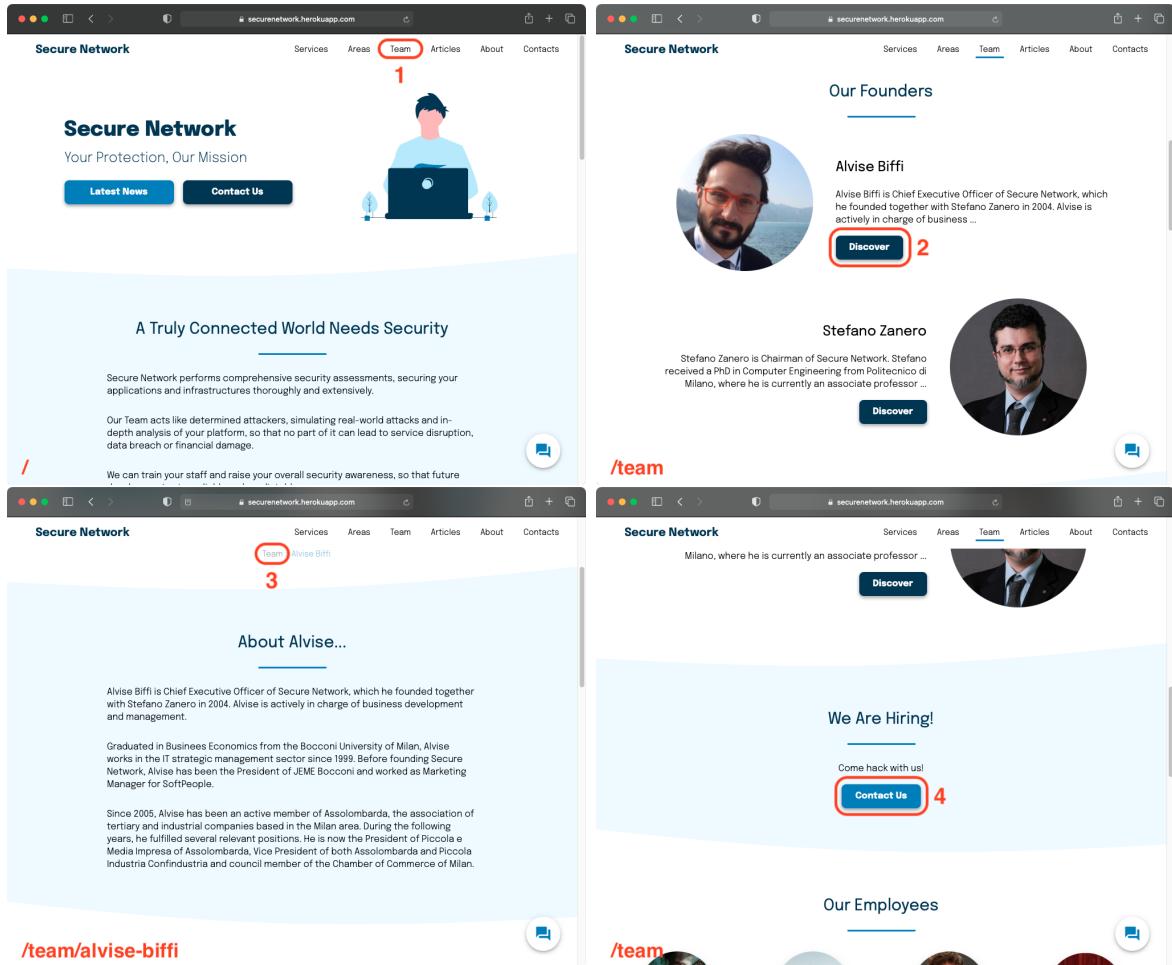


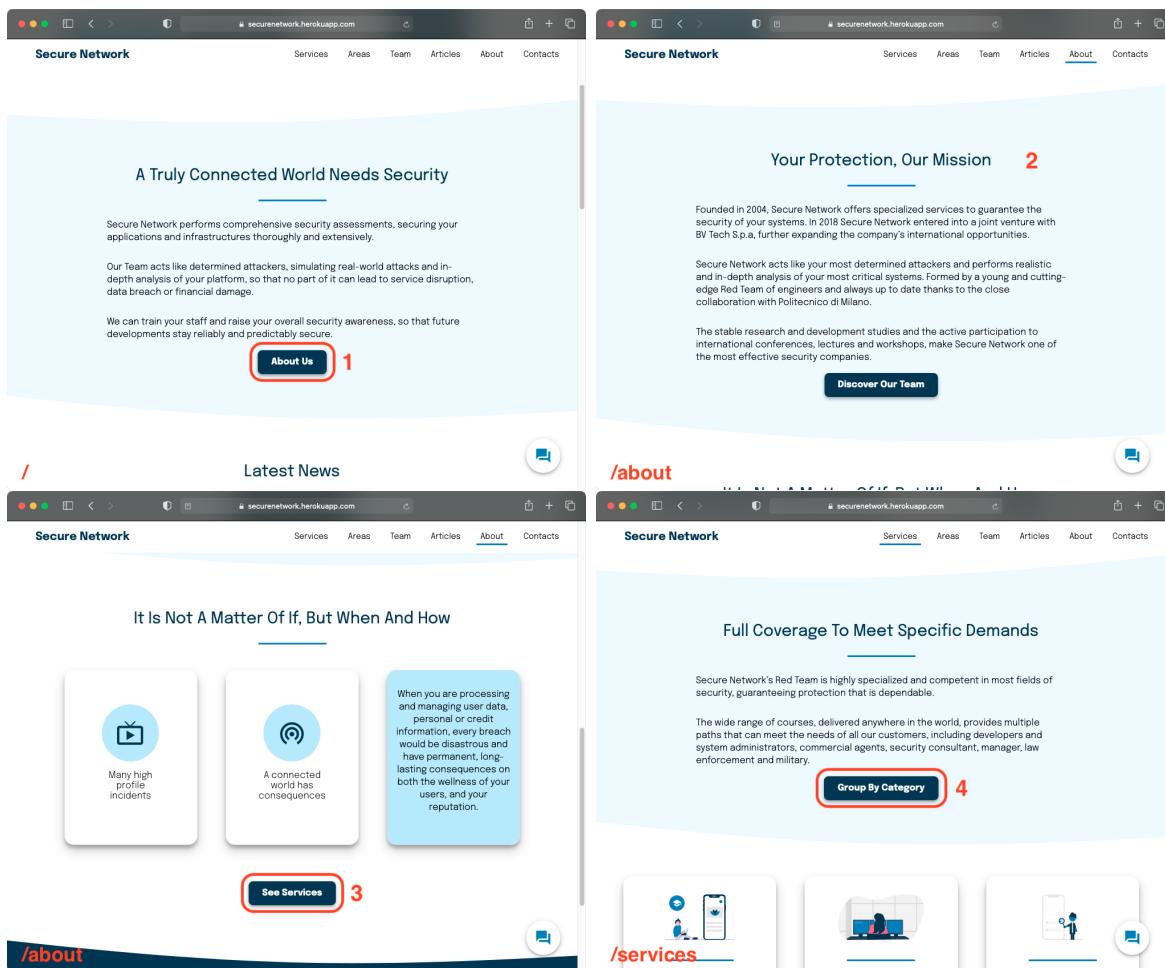
Figure 7.2: Screenshots describing interactive scenario 2.

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^[1]. He decides to click the *About Us* button^[2] and in that page he discovers more about their history^[3].

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^[4]. He only wants to have an overview, so he decides to click on the *Group by Category* button^[5] in order to have a look at that list.



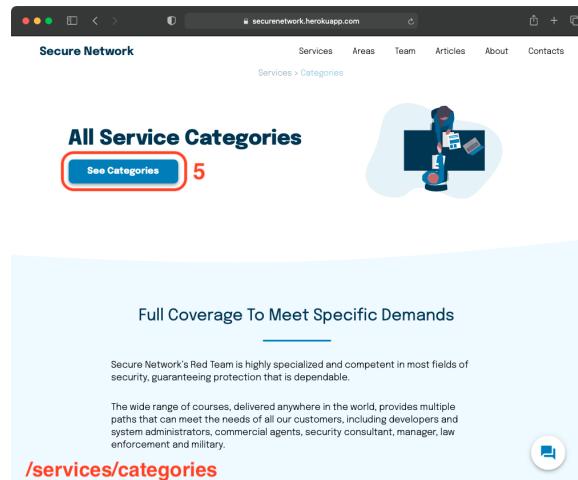
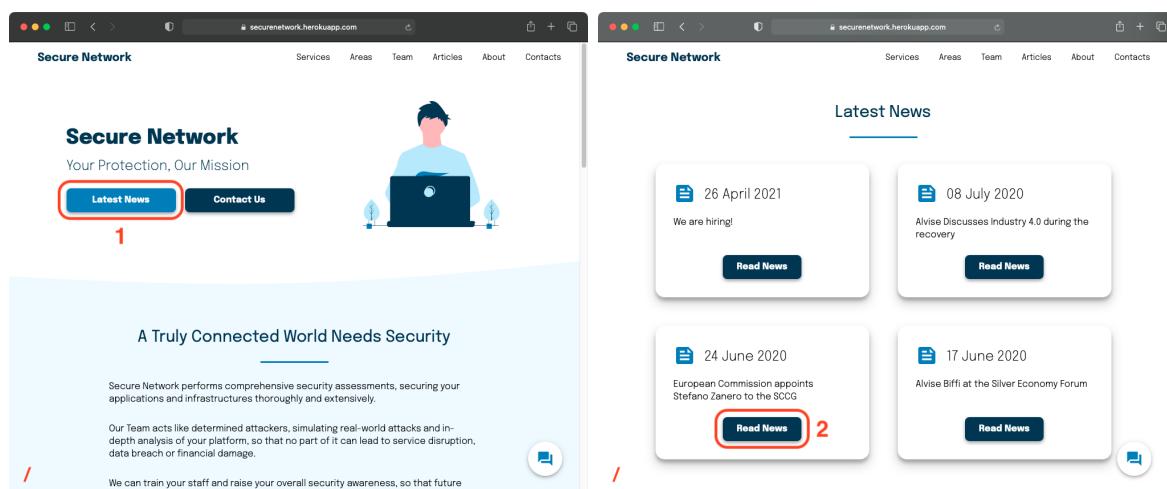


Figure 7.3: Screenshots describing interactive scenario 3.

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^[1] and she spots one about his professor that she wants to read^[2]. After reading that article, she goes back to the *Articles* page^[3] using the breadcrumbs on top and she selects the year *2017*^[4]. Once on the year page, she filters the articles to see only the news^[5] and then she finds the interview that she was looking for^[6].



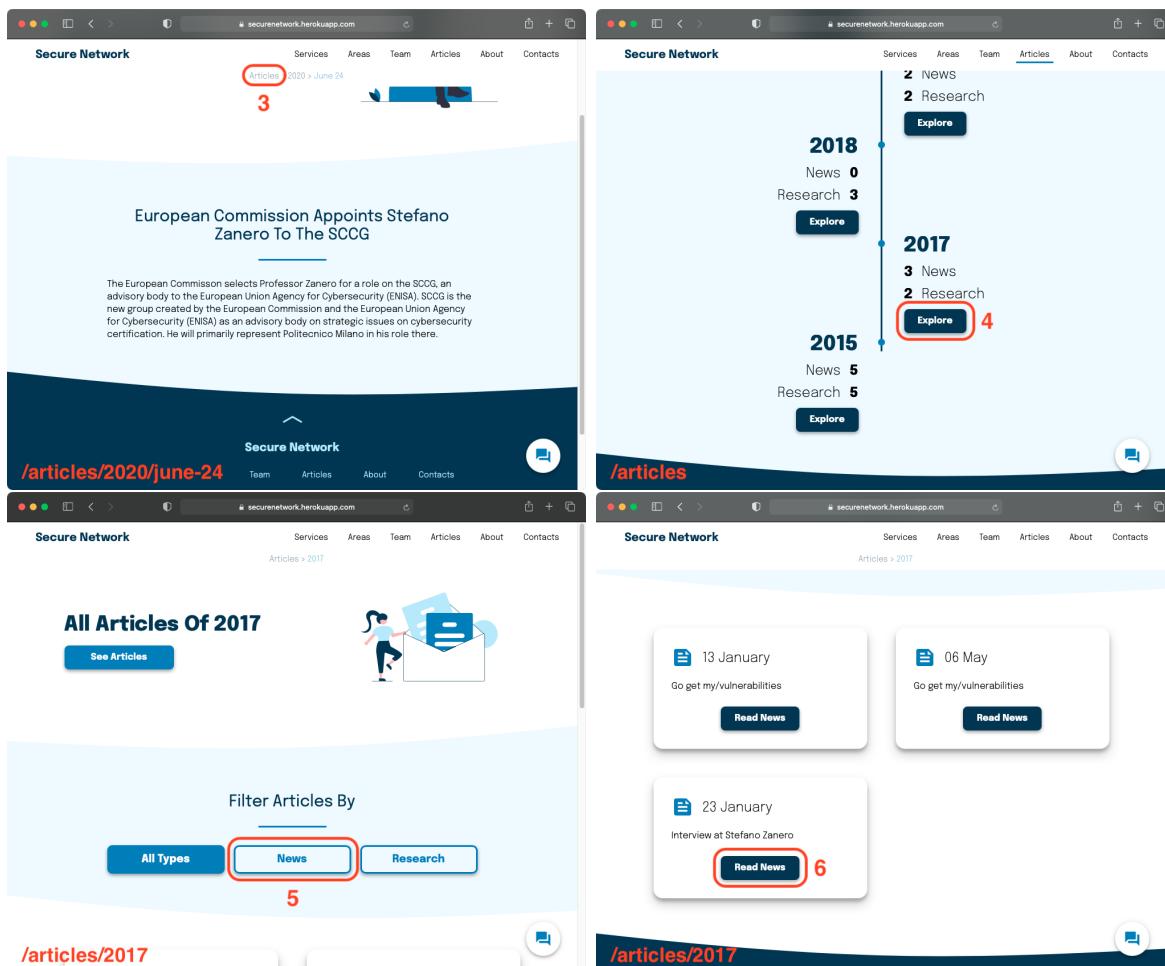


Figure 7.4: Screenshots describing interactive scenario 4.

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*.

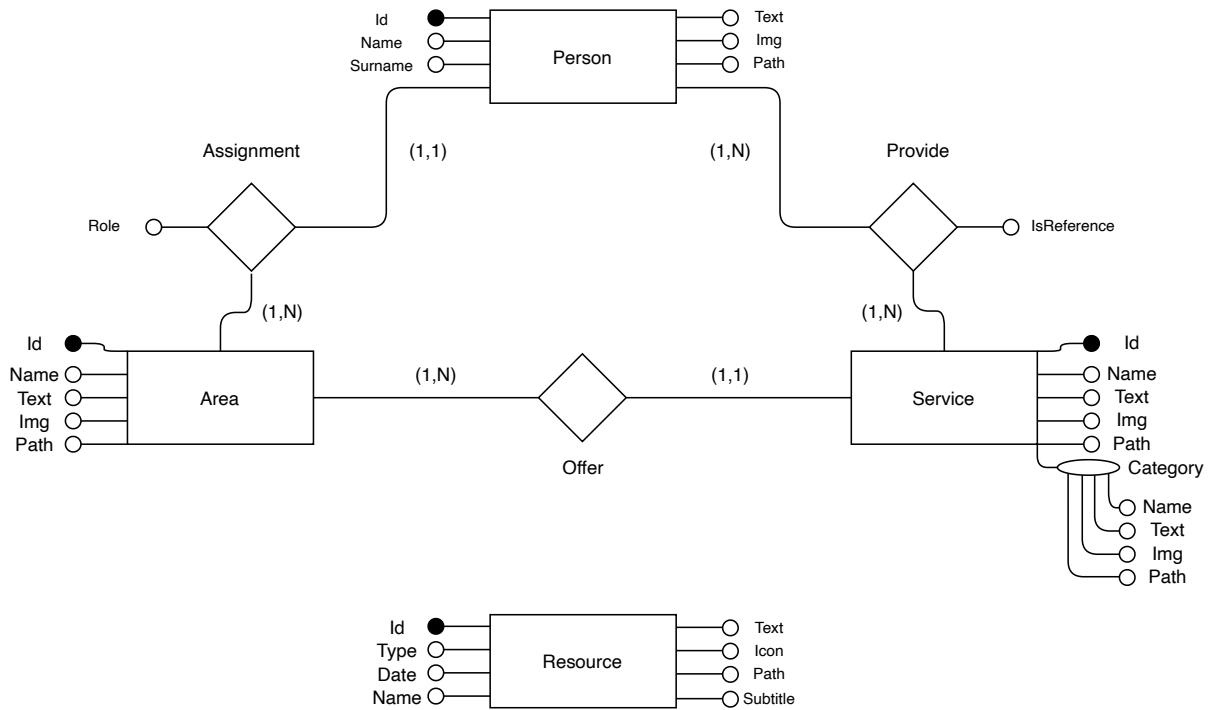


Figure 8.1: ER Diagram

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**.
- **Article.** A *Article* 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	
PK	<u>Id</u>	PK	<u>Id</u>	PK	<u>Id</u>
	Name Text Img Path		Name Surname Text Img Path Role		Type Date Name Text Path Icon Subtitle
		FK	Area_id		

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

Figure 8.2: Relational Tables

List of Figures

2.1	C-IDM Diagram	4
3.1	Content tables (C-IDM in the small)	6
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 Articles 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 Articles 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 Articles 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 Articles 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.	31
7.4	Screenshots describing interactive scenario 4.	32
8.1	ER Diagram	33
8.2	Relational Tables	35