Method of encryption:

Polyalphabetic cipher

Important Clues:

Image cut up into 54 pieces; icons; Euro-Coin; Leaf; tea bag; broken green plastic ring; key; feather; piece of paper torn out of newspaper; wire; curb; lines on tarmac; 11 coloured squared; crown cap; popsicle stick; valve stem from a bicycle; light bulb; tram ticket; button; cigarette butt; twig; walnut; gap between paving stones; Rubik's cube in 002 ½'s Hand; lettering on crane's cabin (0-255)

Hidden active areas:

Four rectangles with picture details, briefcases (in Bascrobat's hand and in front of the cut up image); letter in Retlow's hand

1

Click the top left rectangle on the main page of the mission. A new window will open and reveal an image that is cut up into 54 pieces. There is a briefcase in front of it at the bottom right. Click on the briefcase, and you will see an image of tarmac, a curb and various small objects.

Here's how to read this image: The curb, the little twig, the two lines on the tarmac and the wire represent the **BLACK KEYS OF A PIANO**, the space between them represent the **WHITE KEYS**. The broken plastic ring on the curb looks like the letter C. This tells us that the curb stands for the **NOTE C**. The coin lies on the edge of the curb, and thus marks the **FIRST BLACK KEY, WHICH IS C♯**. The space between the curb and the twig thus stands for the note D. The twig with the leaf lying on it represents the **SECOND BLACK KEY D♯**. The dividing line between the smooth and the rough-textured tarmac is the division between the keys E and F on a piano. Thus, the tea bag marks the note F♯, the key marks the note G♯ and the torn piece of paper with the letter A on it marks the note A. The feather lies on the marker for the 5th black key, the note A.

This gives you the following relation between notes and objects:

```
C# - euro coin
D# - leaf
F# - tea bag
G# - key
A# - feather
```

The plastic ring and the piece of paper are of no further relevance in this mission. They are only clues to help positioning the notes on the tarmac-keyboard.

2

Click the bottom left rectangle on the main page of the mission. A new window will open and reveal an image in which you will also find a briefcase. Click on it to open a new image, again with several small objects, this time lying on a sand and paved ground

Here's how to read this image: The grey twig, the horizontal gap in the pavement, the blade of grass, the upper pavement border and the popsicle stick represent the **FIVE LINES OF A STAVE**. Thus the button, which is lying in the bottommost space, corresponds to the **NOTE F**, the cigarette butt on the gap (and therefore the **SECOND LINE FROM THE BOTTOM**) translates to the **NOTE G**, etc.

This gives you the following relation between notes and objects:

```
F - button
G - cigarette butt
A - tram ticket
B - light bulb
C - valve stem
D - walnut
E - crown cap
```

3

Make a screenshot of the cut up image that is linked to the top right rectangle of the mission's main page. Cut it into 54 pieces and rearrange them to make an intact image.
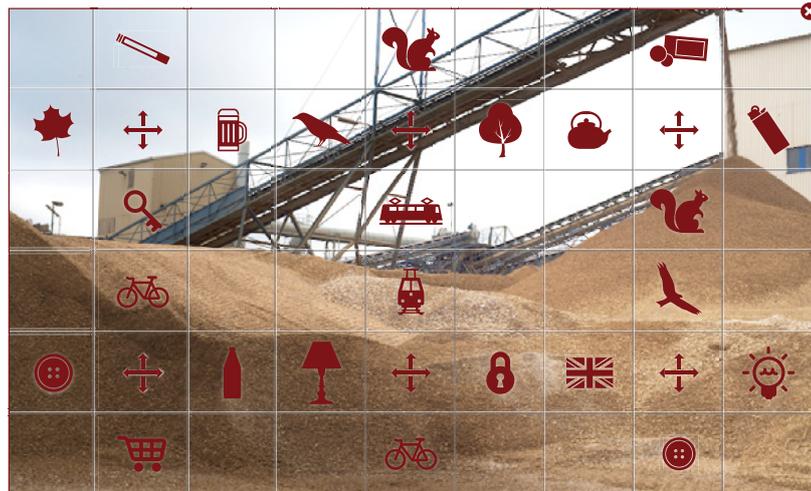
You can now see a pattern consisting of six smaller groups of icons and arrows. In each of them, four icons are arranged around one set of crossed arrows. Each of the icons can be associated with one of the objects (and thus with a note) from 1) and 2).

Note	Photo	Icons
C	valve stem	
C#	coin	
D	walnut	
D#	leaf	
E	crown cap	
F	button	
F#	tea bag	
G	cigarette butt	
G#	key	
A	tram ticket	
B♭	feather	
B	light bulb	

If you now switch the icons as indicated by the arrows and replace them with the corresponding notes you will end up with the following:

	G#			A		D
E		D#	D#	B♭	G	F#
	G			D		C#
	C#			C		F
E		F	G#	B	B	F#
	C			A		B♭

(img. 1)

4

Click the top right rectangle on the main page of the mission. A new window will open and reveal an image with eleven squares in different colours that are arranged in two rows on top of each other. For this mission, their **COLOURS ARE RELEVANT**.

Colours on a computer screen are generated by mixing red, green and blue (=RGB) in different ratios. Thus, any colour tint can be identified by specifying the parts of red, green and blue of which it consists. The portion of the single colours is usually indicated by **A VALUE BETWEEN ZERO AND 255**. The **LETTERING ON THE CRANE'S CABIN** (0-255) is a clue towards this.

Now determine the RGB values of the eleven squares with a colour measuring tool such as this https://addons.mozilla.org/de/firefox/addon/colorzilla. Pay attention only to the decimal values. Every number you have determined can be translated into a letter by using an **ASCII TABLE** (also consisting of digits from 0 - 255).

```
 89 [Y]  108 [l]    66 [B]  101 [e]    79 [O]  110 [n]
101 [e]  110 [o]   108 [l]  255 [-]   114 [r]  108 [g]
108 [l]  119 [w]   117 [u]  255 [-]    97 [a]  101 [e]

 71 [G]  101 [e]    82 [R]              87 [W]  116 [t]
114 [r]  110 [n]   101 [e]             104 [h]  101 [e]
101 [e]  255 [-]   100 [d]             105 [i]  255 [-]
```

You get the following colours:

```
    Yellow          Blue            Orange
    Green           Red             White
```

These colours can be found on a Rubik's cube (just like the one that an agent is holding in the image accessible via the bottom left rectangle of the mission's main screen.)

Transfer the colours and their arrangement to the matrix you have identified in 3.)

(img. 2)

5

Label the sides of a Rubik's Cube according to this image.

6

Note that you have just come across a cube that has been labelled with notes – just as in mission 8. There, the p**LAIN TEXT LETTERS WERE PLACED IN THE CORNERS** of each side of the cube. At this point, these are still missing for mission 9, but you just found out about how to label the **MIDDLE TILES OF THE CUBE'S EDGES**.

Further, what makes a Rubik's Cube special is that its sides can be altered. It seems likely that this will play a role in the further decoding of the mission.

6a – NEWS, Mission 9, #2

There are no clues within the mission towards the placement of the letters on the cube because early during Undercover Job, headquarters was assuming that clever co-agents would be able to write a software to break the code. This hasn't happened, and clues have been released in the news section of undercover-job.com.

One of those clues was a **LABYRINTH** with the inscription **59-95**.

First, find your way through the labyrinth. Next, imagine overlaying the labyrinth with a grid consisting of cells of the same width of the labyrinth's paths. If you now count every cell of the grid you pass on the way through the labyrinth as one step, **STEPS 59 AND 95** will identify the segment of the labyrinth you want to have a closer look at. In this segment there are several

icons that can easily be **ASSOCIATED WITH A COLOUR** also be found on a Rubik's Cube.
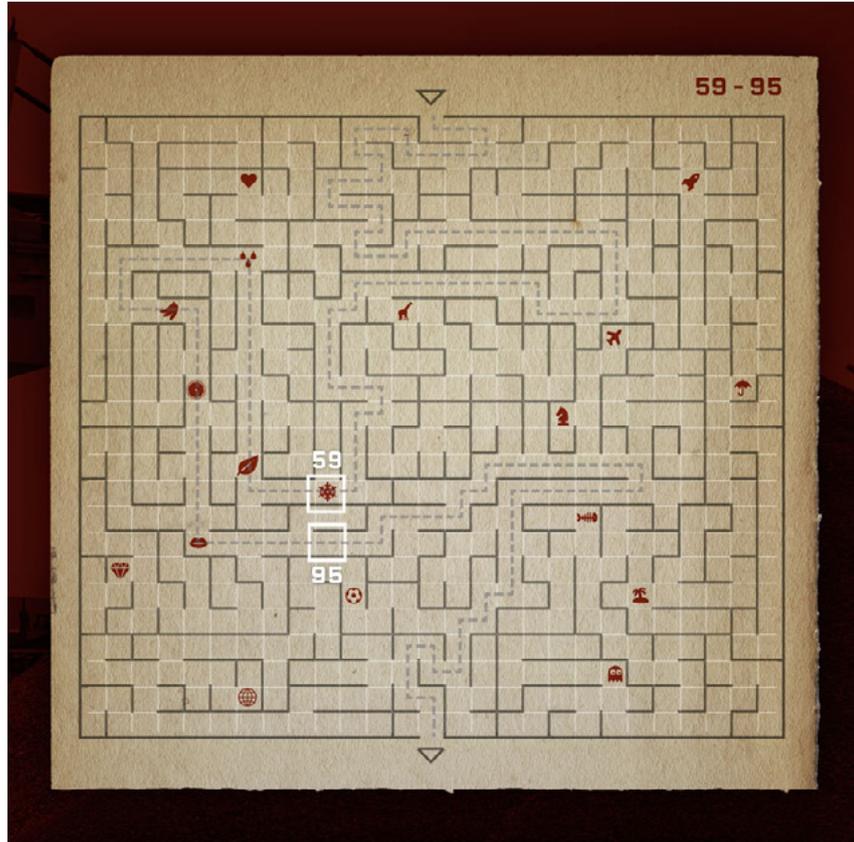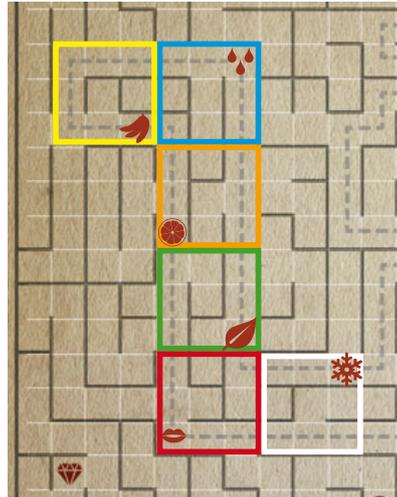

snowflake – white
drops of water – blue
orange – orange

leaf – green
bananas – yellow
lips – red

Draw squares around the icons in the respective colours in a way that
- there is only one icon in each square
- the squares touch each other but don't overlap
- the resulting shape can be cut out and folded into a cube.

Again, this method has similarities to mission 8.

The way through the labyrinth tells you how to distribute letters on the sides of the Rubik's Cube. Begin with the **LETTER "A" AT THE SNOWFLAKE** (the entry point of the labyrinth's way through the shape you've drawn). Then follow the way and distribute the other letters in alphabetical order along it. Remember to only use the corner positions of every square. Also, the rule of I=J and U=V from mission 8 is still in effect, reducing the alphabet to 24 letters.
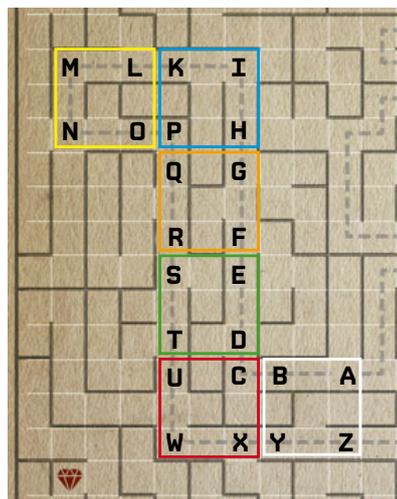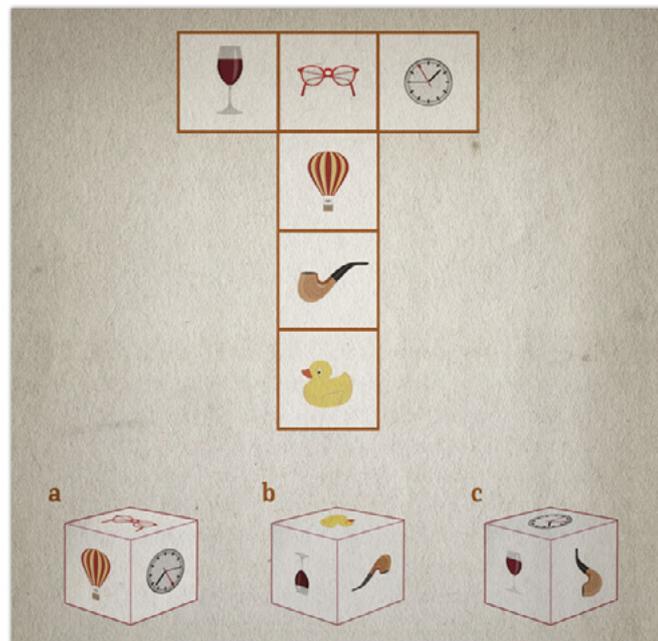
The Rubik's Cube with complete labelling will look like this:
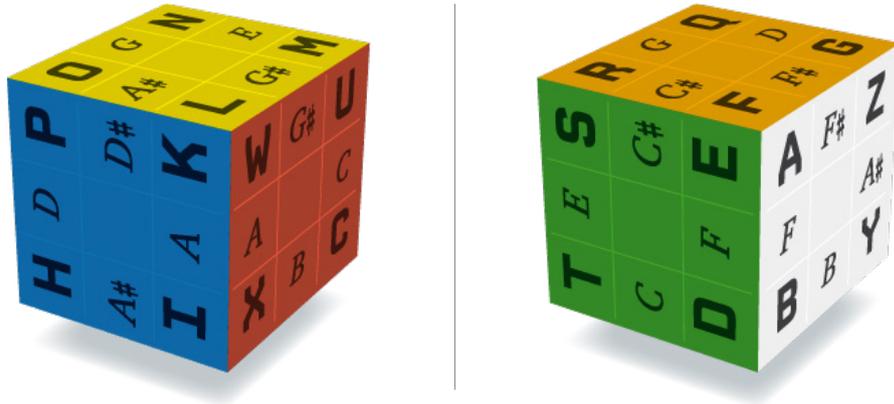
6b – NEWS, Mission 9, #3

Another clue has been posted in the news section of undercover-job.com. Is is a simple puzzle in which a grid of squares has to be assigned to a cube.

The correct answer is a, but it has a flaw: the hands of the watch are pointing in the wrong direction – they are turned by **90 DEGREES TO THE RIGHT**. This is a clue that the Rubik's Cube

has to be rotated just the same way, by 90 degrees to the right.

SOLUTION:

Just as in mission 8, the corner positions of the sides of the Rubik's Cube are identified by the tiles i**N THE MIDDLE OF THE CUBE'S EDGES ENCLOSING THEM**.
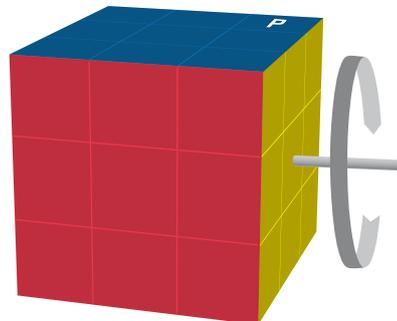
The first two notes of "The New Game" are D and E♭/D♯. They can be find on the blue side of the cube and enclose a corner tile. This tile is labelled with the letter "P". This is the first plain text letter.

✳ *the first two notes of "The New Game"*
\# the first plain text letter

Hold the cube in way that the **LETTER "P" IS IN THE TOP RIGHT CORNER TILE** when looking from above. The red side will be pointing towards you, the yellow side is on the right. (Note: Three other positions for the letter "P" are possible – bottom right, top left, bottom left. Trial and error will reveal that none of these positions yield a solution that actually makes sense.

Now turn the right side of the cube by 90 degrees to the right / forward.

If you now look onto the cube from above you will see in the **TOP RIGHT CORNER** – the same

spot at which the letter "P" was positioned at first – the letter "W"

The next two notes of "The New Game" are F and F♯. They are on the white side of the cube and enclose the plain text letter "A". Again, hold the cube in a way that this new plain text letter "A" will be in top right corner when you look at the cube from above. Turn the right side of the cube by 90 degrees to the right / forward as you did before.

Continue to do this until you have identified all the plain text letters. Remember that the newly detected letter has to be at the top right position before you rotate the cube's side.

You will end up with this solution:

PATETOMNIBUSVERITAS
(lat.: PATET OMNIBUS VERITAS; En.: Truth lies open to all.)

Submitting your solution code is different in mission 9 than before. If you click "break the code" you will see this coded email address:

You have found out earlier that
- the lighter represents the note / the letter "G"
- the bottle represents the note / the letter "E"
- the bicycle represents the note / the letter "C"
- the squirrel represents the note / the letter "D"
- the glass of beer represents the note / the letter "E"

In combination with the letters "T" and "O" (also depicted) you get the email address:
getcode@undercover-job.com

Sending an email to this address before depot 2BSTX has been found triggered an auto response message. The solution didn't have to be included, an empty mail would have been enough. In the auto response message, agents were given a postbox address to which they had to send a letter or a postcard with the solution code PATETOMNIBUSVERITAS. The first one to send the code to this postbox received the depot's content: 500 Euro.

If you send an email to this address now you will get an auto response message telling you

that depot 2BSTX already has been found.

But what's with the bottom right rectangle on the mission's main page?

Click on this rectangle to find an image with the beginning notes for a song by composer H. Retlow, a warehouse with the lettering KCAB DRAW and a shady agent holding a letter.

KCAB DRAW (BACK WARD) and H. Retlow (H. Wolter) point to the clue: BACKWARDS

You can find the complete melody in two posts in "news" (Mission 9, #1.1 and #1.2)

Click on the letter in the agent's hand and find documents that reveal the purpose of this part of the mission: the VERIFICATION OF THE PASSWORD. This verification makes sure that the solution you have found is the only correct solution to this mission.

Solution for the password verification

Take the Rubik's Cube, fully labelled with letters and notes. Taking the clues for backward into account, rearrange the placement of THE NOTES IN THE REVERSE ORDER OF A CHROMATIC SCALE. Replace Note "C" with Note "B", note "C♯" with "B♭", note "D" with "A" etc.

The first two notes of H. Retlow's composition are "B" and "G" and identify the plain text letter "T" as described earlier.

Hold the cube in a way that the plain text letter "T" will be in the top right corner when looking at the cube from above. Next, turn the right side of the cube backward by 90 degrees – towards you (not forward / away from you as you did before).

The next two notes of the composition are „B" and „F♯". They identify the plain text letter "D".

Again, hold the cube in a way that the plain text letter "D" will be in the top right corner when looking at the cube from above. Turn the right side towards you and find the letters "B" and "E". You get the plain text letter "W".

Continue with the remaining letters of H. Retlow's composition and end up with this solution

TDWACENESSUICULTDW
(TDW aceneS suicuL TDW)

The letters TDW (WDT read backwards) are so-called fillers. In cryptography fillers are used to confuse anyone who tries to break a code. Several posts in "news" point to WDT: **W**INNERS **D**ON'T **T**IRE (04/08/.2014); **W**INNERS **D**ESERVE **T**HIS (05/08/.2014); **W**INNER'S **D**AY **T**ODAY(06/10/2014)

The letters in between the fillers (ACENESSUICUL) read backwards give you LUCIUS SENECA – the author of the quote PATET OMNIBUS VERITAS.