Legend:
> original lines
corrections
  comments and questions
==========

>Part 1: Informal Requirements

>1 This part contains the needs for a new light control system for the
>fourth floor of building 32 of the University of Kaiserslautern.

>2 The main motivation for the development of a new light control system
>are the disadvantages of the currently existing system. Since all
>lights are controlled manually, electrical energy is wasted by lighting
>rooms which are not occupied and by little possibilities to adjust
>light sources relative to need and daylight.

>3 Paragraphs are numbered for easier reference.

>1 Needs

>4 In this section, the needs for the new light control system are
>presented. In 1.1, functional needs are listed and in 1.2
>non-functional needs.
#non-functional needs are listed.

>1.1 Functional Needs

>5 The functional needs are split into two groups, user needs and
>facility manager needs, depending on the person who has expressed
>them.
So there are 2 kinds of persons?
        users
        facility managers

>1.1.1 User Needs

>6 The user needs are numbered by U<number>.
#6 The user needs are labelled by U<number>.

>7 At first, general user needs are listed, which are demanded for each
>kind of room:

>U1 If a person occupies a room, the light has to be sufficient
What about the light has to be sufficient?
        amount of light
        light scene
Are these two the same?

>to move safely, if nothing else is desired by a
What is this amount?

>chosen light scene.
What IS a light scene?

>U2 As long as the room is occupied, the actual chosen light scene has
#U2 As long as the room is occupied, the current chosen light scene has
>to be maintained.

>U3 If the room is reoccupied within T1 minutes after the last person
>has left the room, the last chosen light scene has to be
>reestablished.
So establishing a light scene means starting a duration of one particular
kind of light scene. Once established, a light scene can be maintained or
not, at which time another is established.

>U4 If the room is reoccupied after more than T1 minutes since the last
>person has left the room, the standard light scene has to be
There appear to be at least two kinds of light scenes:
        chosen
        standard

>established.

>U5 The wall switches for the window- and the wall-ceiling light group
>in a room should show the following behavior:
There are at least two kinds of light groups
        window-ceiling
        wall-ceiling

>(i) if the corresponding
corresponding to what???

>ceiling light is completely on,
Is this ceiling light a window-ceiling light, a wall-ceiling light or
another kind of light?
Maybe there are at least three kinds of light groups
        window-ceiling
        wall-ceiling
        ceiling
>then the light
WHICH light?
Is there a difference between a light and a light group?

>will be switched off

>(ii) otherwise the ceiling light will be switched on completely
Is there a partial switching on?

>U6 The light scenes can be determined by using the control panel.
There now appear to be at least three kinds of light scenes:
        chosen
        standard
        determined
Is chosen the same as determined?
        chosen by people?
        determined by algorithm?
If they are different, does chosen always supersede determined,
even if safety requires determined?

Or perhaps, there are two kinds of light scenese, chosen and standard, and
determination is something done by a person to know which of the two kinds
is current?

ACTUALLY, a carefully determined lexicon is needed to establish the states
and kinds and operations and then the requirements need to be rewritten to
use ONLY terms from the lexicon.

>U7 For each room, the actual
Is "actual" in this sentence the same as in U2, i.e., "current"?
>ambient light level can be set by the user
Does light level = light scene?
Is an ambient light level another kind of light scene? How does it
relate to a default light scene?

>using the control panel.

>U8 For each room, a default light scene can be
There now appear to be at least four kinds of light scenes:
        chosen
        standard
        determined
        default

Is default the same as standard?

Why is it "a default" rather than "the default"? Are there more than one possible?

>set (not by using the
>control panel).
If a default light scene can be set, but not by using the control panel, then how CAN it be set? What other control devices are there?

>U9 For each room, a default ambient light level can be
Ah, so it seems clear that light level /= light scene.

Also it appears that the full phrase is not "light level" but "ambient light level", and that there are different kinds of light levels, including default

Why is it "a default" rather than "the default"? Are there more than one possible?

>set (not by
>using the control panel).
If a default ambient light level can be set, but not by using the control panel, then how CAN it be set? What other control devices are there?

>U10 The value T1 can be set for each room separately (not by using the
>control panel).
If the value T1 can be set, but not by using the control panel, then how CAN it be set? What other control devices are there?

Why are the sentence structures of U9 and U10 different?

Why "the value T1" and not "a value T1" as with U8 and U9?

>U11 If the outdoor light sensor or the motion detector of a room does
>not work correctly, the user has to be informed.
Which user must be informed? It would see that the facility manager needs to be informed, but the facility manager is NOT a user according to paragraph 5.

>8 The user needs concerning the offices are:

>U12 The ceiling lights and the task light should be maintained by the
Now there are at least four kinds of light groups
- window-ceiling
- wall-ceiling
- ceiling
- task

and it appears that "light"="light group"

Also why are there more than one ceiling light, but only one task light?

>control system depending on different light scenes.
The control system is the aggregation of the control panels?

>U13 The control panel should be movable in the offices, like a
>telephone.
#U13 An office's control panel should be movable as is a telephone.

>U14 The control panel should contain at least:
#U14 Each control panel should contain at least:
OR
#U14 The control panel for an office should contain at least:
> (i) a switch to set the task light (on/off)
This is the task light of the office?

> (ii) a switch to set the ceiling lights (on/off/ambient)
These are the ceiling lights of the office?

I had begun to view ambient light as the normal light coming into the room from outside. The fact that "ambient" is a state of the ceiling light contradicts that. Does "ambient" = "default" = "standard"?

So some lights (ceiling) have two states, on and off
Other lights (task) have three states, on, off, and ambient
Need a list of the states for each of the kinds of lights
- window-ceiling
- wall-ceiling
- ceiling
- task

> (iii) a possibility to set the actual ambient light level
To set the ambient light level of the room?

>9 The user needs for the remaining rooms are:

What are the other kinds of rooms?
What kind of light groups do they have? Is it different for each kind of room?

>U15 In all other rooms the control panel should be installed near a
>door to the hallway.
#door leading to the hallway.

A room may have more than one door leading to the hallway?

>U16 The control panel should contain at least:
#U16 The control panel of a room should contain at least:

> (i) a switch to set the ceiling lights (on/off/ambient)
> (ii) a possibility to set the actual ambient light level

This is very confusing. (i) implies that "ambient" is a state, but (ii) implies that it is a level. Ah! The amount of light that is given off when the ceiling lights are in the ambient state is set in the control panel?

>10 The user needs for the hallway sections are:

What kinds of light groups are in hallways?
Is there a control panel for each hallway section?
If there is not, then what happens if the current requirements become invalid and the lighting situation must be changed?

How are the hallways divided into sections?

>U17 When a hallway section is occupied by a person, the light in this
>hallway section has to be sufficient to move safely.

How much light is sufficient to move safely? What if the person is blind? nearly blind?

What happens if a person stands right at the boundary between two hallway section? Which section is considered current? Is there overlap between the detection area of adjacent sections?

>U18 Before a person enters one hallway section from another one, the
Ah! there is some overlap. How much?

>light in the section being entered is turned on
The light is turned on automatically under control of the control system? under control of a control panel for the hallway section?

>if necessary.
What is the definition of "necessary"?

>U19 The wall switches for lights in the hallway section have to show
Is a wall switch in a hallway the control panel for the hallway section?
Can a hallway have more than one wall switch?
If so, can any switch turn on the lights independently?
Does each switch control one light or all the lights in a section?

>the following behavior:
>   (i) if the light is on, then the light will be switched off
Which light is meant by the second "light", the one that is on?
Does the switch off come automatically? If so, how soon after the light comes on?
>   (ii) otherwise the light will be switched on.
I.e., if the light is off, it will be switched on?

If yes, (i) and (ii) do not seem to be saying much except that the light is a flip flop, and if interpreted literally--at a very rapid rate of flipping and flopping--when it comes to one state, it must move to the other state.

>1.1.2 Facility Manager Needs

>11 The facility manager needs are numbered by FM<number>.
#11 The facility manager needs are labelled by FM<number>.

>FM1 Use daylight to achieve the desired light whenever possible.
Is daylight the same as ambient light?

Using daylight means that all lights are turned off?

How is it detected when there is daylight?
        By timer according to known sunrise and sunset times? Is there a pair of times per day? or over a longer period?
        By detection of the amount of light present in the room?
                Is this on a room-by-room basis? After all, one room might be shaded by an outside tree and another might be in direct sunlight?

>FM2 Lights in a hallway section have to be switched off when the
>section has been unoccupied for T2 min.
Why is this in the FM section rather than up in paragraph 10, discussing hallway sections? The FM sets the value of T2?

All lights in the hallway section? Some lights in the hallway section?

What or who detects that the room is not occupied?

>FM3 If a room is unoccupied for more than T3 minutes, all lights must
>be switched off.
Why is this in the FM section rather than up in paragraphs 8 and 9, discussing offices and other rooms? The FM sets the value of T3?

What or who detects that the room is not occupied?

>FM4 The value T2 can be set for each hallway section separately.

>FM5 The value T3 can be set for each room separately.

>FM6 The facility manager can turn off any light in a room or hallway
>section that is not occupied.
What or who detects that the room is not occupied?

Is this a requirement on the FM or on the control system, which might override the FM's turning off a light in a room or hallway section if the room or hallway section is occupied. If it is a requirement on the FM, how does the FM detect that a room or hallway section is not occupied? Does the control system show the occupation status of each room and hallway section? Is there a closed circuit TV system independent of the control system to allow watching each room and hallway section?

>FM7 If a malfunction occurs, the facility manager has to be informed.
Suppose the malfunction occurs in the part of the system that is to inform the FM? Is a redundant, back-up system required?

Should all malfunctions be mentioned in the reports called for in FM9?

>FM8 If a malfunction occurs, the control system supports the facility
>manager by finding the reason.
Suppose the malfunction occurs in the part of the system that is to find reason? Is a redundant, back-up system required?

Can it be guaranteed that the reason for the malfunction be found?
If not, the requirement should be stated as "by attempting to find the reason."

Is this bug finding system adaptive? As it and the FM work together to find the source of a malfunction, does it learn to report this cause immediately the next time it occurs?

>FM9 The system provides reports on current and past energy
>consumption.
Is anything else reported?
For how long are the data kept?
What data are presented? averages? over what time period?
In what form are the data presented? Tables, Dials, Meters, Graphs, etc.?
Are the data available in real time?

>FM10 All malfunctions and unusual conditions are stored and reported on
>request.
How does this differ from FM7? It appears that FM10 includes FM7 since the FM can have a request pending at all times.

What distinguishes malfunctions from unusual conditions?

Why did not FM7 and FM8 mention unusual conditions too?

>FM11 Malfunctions that the system cannot detect can be entered
>manually.
What means "entering a malfunction"? The FM can request that the system have a specific malfunction? But ONLY for malfuctions that cannot be detected?

Ah, maybe the "entering a malfunction" is for the adaptive bug finding system, to teach it about this new kind of malfunction that it could not detect.

Again, what happens if THIS part of the system malfunctions? Is a redundant, back up needed?

>1.2 Non-Functional Needs

>12 The non-functional needs are split into several groups depending on
>the aspect they are dealing with. They are numbered by NF<number>.
#12 The non-functional needs are split into several groups according to
#the aspect they are dealing with. They are labelled by NF<number>.

>1.2.1 Fault Tolerance

>13 In any case of failure the system shall provide a stepwise

>degradation of functionality down to manual operability.
The requirements should give this degredation in detail because only the users understand the criticality of these functions and thus the order in which the degredation should occur.

>14 Needs in the case of a malfunction of the outdoor light sensor:

Ah, we finally learn that there are light sensors. These sensors measure the:
daylight?
ambient light?

These sensors are used to implement F1?

Are there sensors besides outdoors?

Are the outdoor sensors OUTDOORS or are they INDOORS but sensing light coming in from outdoors?

>NF1 If the outdoor light sensor does not work correctly, the control
>system for rooms should behave as if the outdoor light sensor had been
>submitting the last correct measurement of the outdoor light
>constantly.
It would seem to me that control system should behave as if it were night time. This guarantees that there is enough light to meet safety requirements at the cost of less light efficincy. If the above is the requirement and the last correct measurement had been taken at noon, then at night, there will be NO light, creating unsafe conditions.

>NF2 If the outdoor light sensor does not work correctly, the standard
>light scene for all rooms is that all ceiling lights are on.
This is better, but it seems to contradict NF1?

Also, if the outdoor light sensor does not work, but the people detector is working, why not have the lighting in the room be according to whether anyone is in the room?

Is this THE ONE outdoor sensor for the whole building or the outdoor light sensor for the room? in other words what is the correct sentence:

#NF2 If the single outdoor light sensor does not work correctly, all
#ceiling lights in all rooms are on.

#NF2 If the outdoor light sensor in a room does not work correctly,
#all ceiling lights in that room are on.

However, this seems to change my model of "standard light scene"
I had read "standard" as a particular constant value for light scene.
Sentence NF2 implies that the standard is a variable and its value depends on the state of the outdoor light sensor, for whatever the meaning of "the" is.

I apologize for beginning to sound like Bill Clinton :-)

A lexicon is sorely needed.

>NF3 If the outdoor light sensor does not work correctly and a hallway
>section is occupied, the lights in this hallway section has to be on.

Yes. The same should be in NF2. At least NF2 and NF3 should have the same light scene.

The same question holds about "THE outdoor light sensor"

>15 Needs in the case of a malfunction of the motion detector:

>NF4 If the motion detector of a room or a hallway section does not work
>correctly, the control system should behave as if the room or the
>hallway section mere occupied.
#hallway section were occupied.

Ah, you are leaving the light scene undefined, and defining it indirectly by stating how the control system as a whole should be have. Why not do the same for NF1-NF3???

We finally learn that the way people are detected in a room or hallway section is with a motion detection detector.

>16 Needs in a worst case failure of the control system:
#16 worst-case

>NF5 If the lights in a hallway section are neither controllable
>automatically nor manually, the lights have to be on.
#NF5 If the lights in a hallway section are controllable neither
#automatically nor manually, the lights have to be on.

If the lights are not controllable either automatically or manually, HOW are the lights going to be turned on to meet this requirement?

>1.2.2 Safety and Legal Aspects

>NF6 All hardware connections have to be made according to DIN
>standards.
#NF6 All hardware connections are made according to DIN standards.
(Use indicative mode.)

>NF7 No hazardous conditions for persons, inventory, or building are
>allowed.

Without a list of these, the search could go on forever. Also there is no guidance as to the limits of acceptable risk. After all, one possible hazard is that the fan on the computer on which the control system runs spin out of control and cut off the hand of a user. Another possible hazard is that if the status of a light fixture is changed too rapidly, the bulb in the light fixture might blow up and injure the eyes of those in the room that happen to be looking upward without wearing protective eyewear. Need I continue?

In the end, the only implementation of this requirement is to close the building entirely. This would, of course, save a lot of money on electricity. Of course, doing so introduces a higher risk of pneumonia or sunburn by people unable to take shelter in the building. Need I continue?

>1.2.3 User Interface

>NF8 The control panel should be easy and intuitive to use.

Some concrete way to measure compliance is needed.
A list of principles to follow or a specification of a usability study is needed. What is to be done about the fact that what is intuitive to one is counterintuitive to another?

Perhaps a current standard GUI should be specified as good enough.

>NF9 The system issues warnings on unreasonable inputs.

A list of what is unreasonable for EACH input is needed.

>Part 2: Building Architecture

This part should actually come before Part 1. It would make some of the questions raised disappear.

>17 In this part, the architecture and the installation of the given
This use of the word "installation" is different from in the Dictionary.

>sensors and actuators of Building 32, 4th floor is described.

This is the first mention of "actuators". It feels like some of what is
described in Part 1 makes use of acutators.

>18 In the following document, keywords are marked at their first
>occurrence and listed in the additional dictionary (Part 3).
#18 In the rest of the document, keywords are typset in sans serif oblique
#at their first occurrence and are listed in the dictionary in Part 3.

Ah, Part 3 is the lexicon that I have been asking for. The existence of it
should be mentioned BEFORE commencing with Part 1, and Part 1 must be
rewritten to be in terms of all and only the terms of this lexicon.

>19 Words written in emphasis are names of physical sensors/actuators.
#19 Words typeset in Italics are names of physical sensors/actuators.

>2.1 Building Structure

>floor plan containing the following text:
>O435 O433 O431 O429 M427 O425 CL426 O424 CL422 P420 CL418 O416 O423
>O421 O419 O417 O415 P413 O414 O412 CL410 CL411 ols2 ols3 ols1 ols4 ols6
>ols5 H3 H2 H1 SCW S E section1 section2 section3 SCE W
>Figure 1: Floorplan

Note the careful use of "a" vs. "the" and "all" vs. "each" vs. "any"
This corresponds to careful identification of quantified, free, and bound
variables.

Also parenthesized names of units should come immediately after the generic
name of the unit and not at the end of the sentence.

>20 The fourth floor of building 32 consists of three sections and
>shares two staircases SCE and SCW with other floors of the building, as
>shown in figure 1. Sections are divided into offices(O), computer
>labs(CL), hardware labs(HL), peripheral rooms(P), meeting rooms(M), and
>hallways(H). All rooms in a section are accessible via connected
>hallways. There are three hallways and 22 rooms to control. Figure 1
>also shows the six outdoor light sensors (ols1 - ols6) and the major
>compass directions. The sensors cover the six directions of the
>different walls. The number in the rooms indicate the type of room plus
>a unique number.
#20 The fourth floor of building 32 consists of three sections and
#shares two staircases (SCE and SCW) with other floors of the building, as
#shown in Figure 1. Each section is divided into some hallways (H) and
#rooms, each of which may be an office (O), a computer
#lab (CL), a hardware lab (HL), a peripheral room (P), or a meeting room (M).
#All rooms in a section are accessible via a connected
#hallway. There are three hallways and 22 rooms to control. Figure 1
#shows also the six outdoor light sensors (ols1 - ols6) and the major
#compass directions. The sensors cover the six directions of the
#different walls. The label in a room indicates the type of the room and gives
#a unique number.

>2.2 Current Installation

>21 Currently, ceiling light groups in all rooms can only be turned on
>or off in groups.
#21 The luminaires in a ceiling light group in any room are
#turned on or off only as a group.

The implication is that in the future this might change?

The whole section is about the current situation. If so, then it is
unnecessary and misleading to use "Currently,". That would mean,
"Currently, currently, ... " whatever that means.

There are light groups other than on the ceiling, and their behavior may be
different from that of ceiling light groups?

>22 In all rooms, each ceiling light group is controlled by one or more
>push-buttons, that toggle the light if switched to the other position.
#22 In each room, each ceiling light group is controlled by one or more
#push buttons, each of which toggles the light group if switched to the
#other position.

>23 Task lights are controlled manually by one push-button.
#23 Each task light is controlled manually by one push button.

How can a push button control be anything but manual??? Are there automatic
push buttons that push themselves??

Also why is "manually" mentioned here but not in 22?

>24 In the hallways, several push-buttons can toggle the ceiling light
>group on and off. All push-buttons are connected in parallel.
#24 In each hallway, several push buttons can toggle the hallway's ceiling
#light group on and off. All and only the push buttons for one ceiling light
#group are connected in parallel.

Each hallway has only one ceiling light group?

>2.3 Planned Installation

>2.3.1 Offices

>25 An office (shown in Figure 2) has one door (d1) to the hallway and
>can have doors to the adjacent rooms (d2, d3). Only those doors are
>part of a room that open into the room. Therefore, d3 is not an object
>of the shown room, but the name can be used as a reference. Each door
>is equipped with a door closed contact, named dcc<n>, where n is the
>number of the door in the room.
#Each office (shown in Figure 2) has one door (d1) to the hallway and
#can have up to two doors (d2, d3) leading to its adjacent rooms.
#Only those doors that open INTO a room are part of the room. Therefore,
#d3 is not an object
#of the shown room, but the name can be used as a reference. Each door
#is equipped with a door closed contact, named dcc<n>, where n is the
#number of the door in the room.

I do not see how it is determined that "therefore d3 is not an object of
the room shown." Is this from the fact that d3 leads to another room?
Is this from the notation used in the floor plan?

>26 Each office is equipped with

>1. one motion detector, so that the room is fully covered (imd1).
>Actually several motion detectors can be connected in parallel to
>achieve the coverage.
Why not say only?:
#1. one or more motion detectors (imd<n>), connected in parallel, so that
#the room is fully covered.

>2. two ceiling light groups (window and wall), that can be dimmed
>individually with dimmer-actuatorslle1 (window) and lle2 (wall)
#2. two ceiling light groups (window and wall), each of which can be dimmed
#with its own dimmer-actuator (lle1 and lle2, respectively).

>3. a panel to control the light groups directly or select light scenes,
#3. a panel to control the light groups of the office directly or
#to select light scenes for ????.

Since a light scene is a status for a light group, you need to specify
the light groups whose scenes are controlled.

How is selecting a light scene indirect control of a light group?

>4. a desk with a movable task light on it. The task light can be manually
>turned on and off (pb3).
#4. a desk with a movable task light on it. The task light can be manually
#turned on and off with a push button (pb3).

But it cannot be turned on and off automatically?

>5. two push-buttons (pb1 (window) and pb2 (wall)) for the control of
>the ceiling lights.
#5. two push buttons (pb1 and pb2) for the window and wall, respectively,
#for control of the ceiling lights in the office.

How come you said nothing about manual, direct, etc. control?

>6. three status lines (sll1..3) that show the status of the three light
>sources.
#6. three status lines (sll1, sl2, and sl3), each of which shows the status
#of one light source in the office.

All of a sudden, there are three light sources in an office.

>floor plan containing the following text:
>office adjacent office adjacent office ControlPanel Desk imd1 d1 d2 d3
>Hallway ceiling lights light group
>Figure 2: Office

>2.4 Hallway

>27 Each hallway is limited by two doors, leading to the adjacent
>hallways. Each door is assigned to only one hallway. Therefore, in the
But what about hallways are at the ends of the buildings. Each of them
has only one door?? No. They all have two doors. But in the case of the
ends, these doors cannot lead to adjacent hallways.

>given floor with 3 hallways and 4 doors, there exists one hallway with
>two doors and two hallways with only one door. The assignment of the
>doors and their associated names are shown in Figure 3. Each door is
>equipped with a door closed contact, named dcc<n>, where n is derived
>from the name of the door.

>28 Each hallway is equipped with

>1. two motion detectors (imd1 and imd2), placed above the doors at each
>end of the hallway to determine the presence of a person near a door,
But what about presence in the middle of the hallway, not near any door?

>2. one motion detector to cover the whole section (imd3), can be
>several connected in parallel for coverage.
#2. at least one motion detector (imd3) to cover the part of the hallway not
#near the doors. If there are more than one, then they are connected in
#parallel and are named ...?????

>3. one ceiling light group that can be turned on and off,
Turned on and off automatically, manually, both?

>4. several wall push-buttons (pb) to toggle the light, an impulse
>relay, which controls the ceiling light group, and normal relays in
>parallel to push-buttons.
#4. several wall push buttons (pb1, ..., pbn) each of which toggles the
#ceiling light group, an impulse
#relay, which controls the ceiling light group, and normal relays in
#parallel with push buttons.

How does an impulse relay control a light group? Automatically? Manually?

What is the difference between an impulse and a normal relay?

How does a normal relay control a light group? Automatically? Manually?
What happens if it is in parallel with a push button.

>5. one status line (sll1) that determines if the light is on or off
shows

This light is the light group of the hallway?
>(sl1)
Which is the name of the status line? sll1 or sl1?
Why are there two of these names when there is only one named object?

>floor plan containing the following text:
>d1 d2 d3 d4
>Figure 3: Three hallways

>2.4.1 Staircase

>29 Staircases connect several floors.
#29 Each staircase connects several floors.

Ah, as opposed to "Each stair case connects two floors". So a staircase is
as tall as the whole building.

>30 At the floor level, a staircase is equipped with
#30 At the landing of each staircase at each floor, the staircase is
#equipped with

>1. one motion detector imd1 above the door to the adjacent hallway to
>detect motion near the door.
#1. one motion detector (imd1) above the door of the landing that leads
#to the adjacent hallway to
#detect motion in the staircase near the door.

>2.4.2 Computer Labs
Why is "Computer Labs" plural but "Staircase" in 2.4.1 singular?

>31 A computer lab has one door (d1) to the hallway and can have doors
>to the adjacent rooms (d2, d3). The light installation is the same as
>in the offices. The sensors at the doors are named like the ones at the
>offices.
#31 Each computer lab has one door (d1) leading to the hallway and can
#have other doors leading
#to adjacent rooms (d2, d3). Its light installation is the same as
#in an offices. The sensors at the doors are named like the ones in an
#office.

>32 Each computer lab is equipped with

>1. one motion detector, so that the room is fully covered (imd1).
>Actually, several motion detectors can be connected in parallel to
>achieve the coverage.
#1. one or more motion detectors (imd<n>), connected in parallel, so that
#the room is fully covered.

>2. two ceiling light groups (window and wall) that can be dimmed
>individually with dimmer-actuatorslle1 (window) and lle2 (wall)

#2. two ceiling light groups (window and wall), each of which can be dimmed
#with its own dimmer-actuator, lle1 and lle2, respectively.

>3. a panel to control the light groups directly or select light scenes,
#3. a panel to control the light groups of the office directly or
#to select light scenes for ????.

Since a light scene is a status for a light group, you need to specify
the light groups whose scenes are controlled.

>4. two push-buttons (pb1 (window) and pb2 (wall)) for the control of
>the ceiling lights.
#4. two push buttons (pb1 and pb2) for the window and wall, respectively,
#for control of the ceiling lights in the computer lab.

How come you said nothing about manual, direct, etc. control?

>5. two status lines (sll1, sll2) that show the status of the light
>sources.
#5. two status lines (sll1 and sl2) each of which shows the status
#of one light source in the computer lab.

Why are there are only two light sources in a computer lab while there are
three in an office.

>2.4.3 Hardware Labs

>33 Same as computer labs, but with more than one door to the hallway.
#33 Same as computer labs, but with more than one door leading to the hallway.
Unless the two rooms are identical, it is better to flesh out the full
details.

>2.4.4 Meeting Room
Why is "Hardware Labs" in 2.4.3 plural, while "Meeting Room" is singular?

>34 Same as computer lab.
labs.
(for consistency with 33)

>2.4.5 Peripheral Rooms

>35 The peripheral rooms will not be controlled by a computer system,
>and thus they will not be presented furthermore!
#35 The peripheral rooms will not be controlled by the computer system,
#and thus they are not described here!

>2.5 Sensors

>36 This section describes the real physical sensors including
>converters if necessary.
Real? are there non-real physical sensors?
What kind of sensors are there?
Are motion detectors sensors?
Why would it ever NOT be necessary to describe a sensor?

>37 Analog sensors typically have an exponential time response. Reaction
>time is the time from a change of the sensed property to the time when
>the sensor has reached 90% of the change, excluding conversion time.
>Conversion time is the time to convert the analog value to a digital
>one that can be accessed by the control system.

>38 NC means "normally closed". Closed is coded as 1, open as 0.
What is open or closed? The sensor or the thing that the sensor senses?

>==========
>Table 1:

>Name
>Abbre v.
>Type
>Resolution
>Range
>Reaction/Conversion Time
>Description
>----------
>door contact
>dcc
>NC-contact
>
>0, 1
>10 ms
>It is placed above the door and is 1 if the door is fully closed.
>----------
>wall switch
>lsw
>switch
>
>0, 1
>10 ms
>2 stable positions
>----------
>push-button
#push button
>pb
>momentary push-button
#momentary push button
>
>0, 1
>10 ms
>1 as long as pushed
>----------
>motion detector
>imd
>passive infrared motion detector
>
>0, 1
>1 s
>1 means a person is moving, even very slowly, in the range of the detector. Transition to 0 can b
>----------
>outdoor light sensor
>ols
>analog light sensor
>1 lux
>1-10000 lux
>10 ms/1 s
>Mounted perpendicular to facade, measures the illuminance of the facade for the calculation of li
"illuminance" -> "illumination"
>==========

>2.6 Actuators

>39 Actuators have a linear time response. Reaction time is therefore
What does "linear" mean in this context? Could there be an exponential
response time?
What is the difference between response time and reaction time?

>defined as the time to change from 0 to 100%/100 to 0%, if different.
As the WHAT of these times if they are different, the minimum, the maximum,
the average?

In general, this sentence is impossible to parse.

>==========

```
>Table 2: Actuators

>Name
>Abbre v.
>Type
>Range
>Control
>Reaction/Conversion Time
>Description
>--------------
>dimmable light
>sll
>status line
>
>0, 1
>10 ms
>Senses if the light has the voltage turned on or off.
>--------------
>
>cia
>status line
>
>0, 1
>10 ms
>Even if the CS sends an 1 within every 60 s, the CS is still alive.
>--------------
>
>dll
>dimmer
>0-100%
>
>10 ms
>Controls light between 0 (off) and 10-100% (on).
>--------------
>relays
>
>
>1, 0
>
>10 ms
>
>================

>40 The structure of the dimmable lights is shown in the next picture.
#40 The structure of a dimmable light is shown in the next picture.

>Inputs to the dimmable light are the pulse line to toggle the light, a
>dim value to set the current dim value and the signal control system is
>active to show the status of the control system. If this signal is not
>sent every 60 s, the light switches to fail safe mode and dim value
>changes to 100%. The output is a status line to show the current state
>(on or off) of the light.

This is the first mention of a dimmable light.
Are the lights in a light group dimmable?

>circuit diagram containing the following text:
>push-button Control-system pulse status line phase control system is
#push button Control system
>active Dimmable dim value light

>Part 3: Dictionary of Terms

The following terms used in Parts 1 and 2 are not defined:
        dimmable light
        light installation
        light group
        relay
        impulse relay
        normal relay
        physical sensor
        toggle

>=======================
>Table 3: Dictionary of keywords of the application domain
>Keyword
>Abbreviation
>Description
>German Translation
>--------------
>actual user
# "current" would be a better word
>
>current user of a room
>aktueller Benutzer
>--------------
>actuator
>
>device that can be controlled by control system
>Aktuator
>--------------
>ambient light
>
>
I have not seen ANY definition yet.
>Umgebungslicht
>--------------
>blind
This was NEVER used; how is it relevant?
>
>used to shade window from the outside
>Jalousie
>--------------
>ceiling light
>
>luminaire under or in the ceiling,
>Deckenbeleuchtung
>--------------
>comfort time
This was NEVER used; how is it relevant?
>
>time period in which full room climate comfort is expected
>Benutzungszeit
>--------------
>computer lab
>
>room with many terminals, workstations, open to all group members and temporarily to students of
>Terminalraum
>--------------
>contact
>
>electrical or magnetic gadget to determine the state of a door, window etc.
>Kontakt
>--------------
>control panel
>
>small panel, typically on the wall, with a keyboard, LEDs for important states, and a simple disp
>Bedienungsfeld
>--------------
>control system
>
>hard- and software system that controls indoor climate, lighting, safety and security Kontrollsys
```

>Kontrollsystem
>--------------
>dimmer-actuator
>
>controls the output of a luminaire
>Dimmer
>--------------
>door
single or double?
>
>
definition?
>Tu:r
>--------------
>environment
This was NEVER used; how is it relevant?
>
>surrounding of section of the building, indoor and outdoor
>Umgebung
>--------------
>facility manager
>FM
>person responsible for running a building on a daily basis
>Hausmeister
>--------------
>hallway
>
>part of a building between several rooms to connect them to each other
>Flur
>--------------
>hardware lab
>
>room in which experiments with hardware are performed
>Hardware-Praktikumsraum
>--------------
>illuminance
"illuminance" -> "illumination"
>
>amount of light incident on a surface, measured in lux
>Beleuchtungsstdrke
>--------------
>impulse relays
>
>changes state (on, off) with each signal
>Stromsto_relais
>--------------
>installation
>
>equipment belonging to the building and that can be operated, like radiators, windows openers, light fixtures, ...
>Installation
>--------------
>light scene
I was hoping to find in here the classifications like I had determined
There now appear to be at least four kinds of light scenes:
        chosen
        standard
        determined
        default
>
I have seen "light scene" abbreviated as "light" although "light" is in
this dictionary as an abbreviation of "luminaire"

>light scenes are predefined settings of the light levels and an ordered list of luminaires which should be used to achieve them. One light scene consists of 4 parameters: 1. name of light scene 2. il

What is a luminaire?? the definition given below is empty
But in definition of "task light", it appears that a luminaire is a single
light, a lamp.

But "ordered list of luminaires" sounds strange w.r.t. this assumed definition.

>Lichtszene
>--------------
>light sensor
>
>measures the illuminance in a half sphere perpendicular to it's flat bottom
its
>Lichtsensor
>--------------
>luminaire
This was NEVER used; how is it relevant?
>light
>
definition?
>Leuchte
>--------------
>member
This was NEVER used; how is it relevant?
>
>persons in research group
>Gruppenmitglieder
>--------------
>motion detector
>
>imd detects motion of a person or animal in its range, state is on during positive detection
>Bewegungsmelder
>--------------
>office
>
>room for one or two group members with terminals and/or workstations
>Bu:ro
>--------------
>off-time
This was NEVER used; how is it relevant?
>
>time in which no usage is expected
>
>--------------
>peripheral room
>
>room for computer peripherals, copy machines, general group access
>Peripherieraum
>--------------
>public room
This was NEVER used; how is it relevant?
>
>accessible to all group members and the public at all times
>vffentlich zugdnglicher Raum
>--------------
>push-button
#push button
>
>is on, as long as pushed manually
>Taste
>--------------
>responsible person
>
>person responsible for individual settings of one room
>verantwortliche Person
>--------------
>room
Why are some kinds of rooms defined in the dictionary, eg, office,
but other kinds are not, eg, computer lab, hardware lab, meeting room?

>
>
definition?
>Raum
>--------------
>sensor
Where are the physical and analog sensors?
>
>device that can sense state of the building, users or environment
>Sensor
>--------------
>stand-by time
This was NEVER used; how is it relevant?
>
>time in which a person is expected in a room
How do you measure expected time?
>
>--------------
>status line
>
>A wire that has the status of a device as value
>
>--------------
>switch
How does this differ from a push button?
>
>Can be turned on or off manually
>Schalter
>--------------
>system
>
>
definition?
>System
>--------------
>task light
"desk lamp" is more common at least in North American English
>
>luminaire on desk
>Arbeitsleuchte
>--------------
>temperature sensor
This was NEVER used; how is it relevant?
>
>
definition?
>Temperatursensor
>--------------
>user
>
>
definition?
>Benutzer
>--------------
>weather
This was NEVER used; how is it relevant?
>
>outdoor temperature, wind, radiation, humidity
>Wetter
>--------------
>window
>
>
definition?
>Fenster
>--------------
>workshop
This was NEVER used; how is it relevant?
>
>Room with tools and special machines for electronic and metal work, access for technicians
>Werkstatt
>==========