The SecureCat System
An innovation in dorm security

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The Problem

The University of Arizona’s Residence Life has enacted a policy in which student residents at dorms on campus are required to check in any and all guests with the Desk Assistant at the front desk or the Resident Assistant on duty if the Desk Assistant is unavailable. Because of the inconvenience and inefficiency of this task, neither students nor Desk Assistants/Resident Assistants uphold the policy.

In this proposal, we will focus on a solution to the inconvenience of this task, and the risks involved in not upholding this university policy.

The Solution

The SecureCat System

The SecureCat System uses pre-existing technology to operate its new security features. Using technology already used in student CatCards, along with adding existing technology to the CatCards, our new system is able to effectively identify students who have not checked into the building. It will also keep a recorded log of who enters and exits the dorms on campus. This will help to create a safer living and working environment for all students and faculty members.

The Technology

The check-in system uses the card swipe scanners and keypads that are already installed in all of the dorms on campus. A student swipes their card on the scanner, and then enters their four-digit door access code on the keypad. Once their pin is entered, the scanner will de-energize a magnetic strip inside the card. This will keep the door sensors from recognizing the energized CatCard and will allow the student to pass through without the alarms going off.
This technology is similar to that which is used in library books. When checking out a book from the library, the sensor in the book must be deactivated before leaving the building, otherwise the sensor will activate sensors that are installed at the exits. Leaving without checking out the book causes the sensors to alert library workers that the book has not been properly checked out.

Much like these systems in libraries, the SecureCat System will send an alert when a student has not properly swiped into the building. It will utilize sensors that are built into the doors of the dorms in which the system is installed. These door sensors will check for the magnetized strips embedded within students’ CatCards. This will ensure that every student is properly checked in, as every student is required to bring their CatCard around with them wherever they go.

Using this system, all students will be able to be identified and either granted or denied access to a dorm depending on whether or not they live there or are a registered guest.

Once activated, the SecureCat System will also activate a small swipe-in window for other cards. During this window of time, the student resident will be able to swipe the cards of their guests. This will allow the guests of the student to gain access to the building as well, without the door sensors going off. All of the guests that are swiped in will be recorded as coming in with that particular student. This will help to create a digital log off all the students who enter and exit the building. Once the student has finished swiping in all of their guests, they hit the complete button on the keypad and the window will be closed. They can then enter the building.

From a technology standpoint, the SecureCat System is very modern, yet is based off of already existing technologies. Therefore, it will be relatively inexpensive to set in place and will be easy to install. It is based off of the existing security technologies that are already in place in the dorms around
campus. As a result, dorms will not require a remodel to install the new systems. Using the SecureCat System’s new security features, a safer and well-monitored living environment will be provided to the students and faculty of the University of Arizona.

Value Proposition

Cost-Profit Analysis

The SecureCat System offers an overall net increase in student safety at a very low cost. The SecureCat System offers the following benefits, which will be discussed in deeper depth:

- **Automatic, electronic updating and tamper-proof record of student check-ins.**
- **Increased student participation in the guest check in system**
- **Simplification of the Desk Assistant’s job, leaving more time open for more important tasks**

The SecureCat System would be linked to the University of Arizona’s database, which would allow for a constantly updated set of data. This data could then be manipulated by the University through sorting lists by name, CatCard number, or by dorm. This would allow the University to keep track of how many people are in what dorm, and track visitation statistics.

A digital record is better than a paper record because it is much harder to lose or tamper with electronic data that is kept on an external server than a physical book. Additionally, with guests being registered to a certain resident for the period of their stay, they would act more responsibly so as to not get their friends in trouble.

One of the problems with the current guest check in system is that there is no incentive for students to check in. For one, Desk Assistants cannot memorize
every single face that lives in the dorm, so the guest check in policy is largely unenforceable. Furthermore, the guest check in process is too inconvenient and slow for students to voluntarily do it. Either a desk assistant has to manually check in the guest, or if there is none available, a RA has to be contacted, which takes up a ton of time.

The SecureCat System, seamlessly integrated into the process of entering the dorm, would be used by students simply because it is extremely easy to use. Furthermore, with the addition of sensors to tell a Desk Assistant if somebody unregistered is entering, students would be effectively forced to be checked in.

The Desk Assistant has many important tasks to do, like answering phone calls, sorting mail, and checking out equipment. If the guest check in process is removed from their list of everyday duties, they will have more time to focus on these other, more important tasks. That means that these other tasks will be done better. This will also result in a higher quality of life for residents, who can then access the Desk Assistant’s services faster.

Who Benefits

The University
The university will receive benefits from the SecureCat System, especially in the case of an accident, emergency, or damage occurring. With the new system, the university will know who was in the building, therefore be able to find who was involved and responsible. The university will also have an electronic record of what used to be a hand-written log of guest visits. With the automatic, electronic record of guests being checked in, the log cannot be lost or tampered with, improving the university’s security.
Residence Life

Residence Life will also benefit from the SecureCat System because, with this system, they can be secure in the effectiveness of their policies. With an electronic record of the guests that check into each dorm, Residence Life can keep better track of who is in which dorm and when.

Another benefit of the SecureCat System is the door sensors, which will alert the Desk Assistants if a guest has not been checked in at the front doors; the DA can then check the guest in at the front desk. Desk Assistants will benefit from the SecureCat System because it will allow them to focus on other tasks (such as mail room duties) while still having control of entrances into the building.

Desk Assistants’ Duties

- Receiving and sorting mail
- Checking out equipment from supply room
- Checking out lock-out keys and temporary access cards
- Serve as an information desk
- Checking in guests
- Collecting and documenting lost and found items
- Documenting payments on lock-out keys and re-keying procedures
- Regulating Hall Council supplies

Checking in guests, which seems as if it may be one of the easier tasks for a Desk Assistant, actually proves to be a time consuming and inconvenient task. The
SecureCat System is an easier-to-use, more efficient system, and it alleviates the responsibility of checking in every guest off of the DA’s shoulders. As seen in the table above, a Desk Assistant has many other tasks that need to be completed at any given time, during any given shift, which are held off because of the task of checking in guests.

**Students**

With the SecureCat System, students of the University of Arizona living in and visiting dorms on campus will be provided a safer environment. Because the guests will be required to check into dorms, they will feel more responsibility while being inside the dorm, so the likelihood of guests trashing a dorm or being too noisy during quiet hours will decrease. Another benefit of the SecureCat System is that students will be able to easily check in any guests with a fraction of the effort that it takes now.

**Why SecureCat System is Beneficial**

**The Reasons**

The benefits of the SecureCat System are unbelievable. Primarily, the University is now able to have a more comprehensive record of the occurrence of guest visits. Currently, the only visitor log kept for a dorm is a set of papers that are organized chronologically. Swiping your guests in using a SecureCat keypad allows data to be recorded electronically. This data can then be organized electronically by name of the guest, name of the resident, date of the visit, and more. Looking up visitor information will become more streamlined and more easily applicable for Residence Life.

Of course, this information is also being recorded much more quickly—instead of manually taking down a 16-digit card number and the names of all students involved, information is now collected effortlessly and available for reference immediately.
Paper trails have become less efficient in society, as the digital world often offers an extra layer of security for important information. By utilizing SecureCat, visitor information is now stored on a University of Arizona database; there will be no paper pages that can be lost or tampered with. This information will now be accessible to Residence Life in a more dependable, secure format that eliminates the possibility of human error; the computer system is not going to “mis-read” the 16-digit code, or misspell a student’s name, because databases already exist that relate Catcard numbers to students’ names.

The Goal
The main goal of SecureCat is to create an easier way for students’ visitors to be checked into dorms; however, the system can also improve the functionality of the dorm itself.

Desk Assistants are constantly flooded with work to do, whether it’s sorting mail or answering calls. It can take five minutes to properly check in a group of visitors by hand, and on a busy day these five minutes can be worth a lot. If the SecureCat card scanners are able to record these guests on their own, the Desk Assistant no longer needs to be responsible for checking in guests unless those students are not University of Arizona students.

This also allows guests to be in dorms for more flexible hours—DAs are only on duty for about 16 hours a day, and to check in a guest after hours, a resident would first have to find an RA who is not currently occupied with other tasks as well. Eliminating the middle man from this process allows a more flexible, useful protocol for guest check-in.
Who is Responsible

The University

Because this program offers so many benefits to the University, we believe that the University of Arizona should be responsible for funding the implementation of this project.

SecureCat offers a greater ability to enforce dorm rules and a prevention of the destruction of hallways and public property. It is effortless to use and offers peace of mind to the university, which we believe should be incentive enough for the University to give funding. Even more, it is not required for every keypad at every dorm to be replaced—just the main entrance keypad outside of lobbies of buildings. This is because the lobby door is the only door open 24/7, whereas other doors close at 8 PM and reopen at 8 AM.

Residence Life & Maintenance

The funding from the University will be given to the maintenance staff of resident halls—the same parties responsible for repairs and upgrades in dorms. Because only one keypad needs to be installed for each building, the replacement process can easily be completed over the course of the summer, even with students occupying a handful of the dorms.

Giving this job to UA maintenance crews could actually be economically beneficial—the whole university works on a “skeleton crew” during vacations and breaks, so hiring University employees allows the University to support its staff and offer a little extra income during its off-season.

Of course, a new program like this would require training in order to be implemented correctly. Resident Assistants already attend weeks of training before the start of the school year, and both the RAs and DAs can be made aware of this new process before the year even begins.
**Student Residents**

Each RA is also required to hold a “welcome meeting” for their hall, and this is the time where RAs can introduce the new program to student residents at once. This is especially important in halls that have returning residents—these are the students that are probably most accustomed to the old process.

RAs should also emphasize the importance of residents’ advocacy for the program. While everyone living in a dorm will quickly become used to the system, a majority of University students do not live on campus, and may not have any idea that there are rules regarding guest check-in at all. Because of this, it’s important that residents explain the process the first time they have guests coming through, so that word of the new program can spread quickly and be an expected part of a dorm visit for any University of Arizona student.