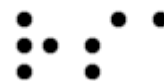




# Assistive Technology at **Work** in **Arizona** 2015...

**Introduction and General Information**



**RSA**

RSA: Rehabilitation Services Administration

# Tools of the Trade

## What is Assistive Technology?

***"For most people, technology makes things easier. For people with disabilities, technology makes things possible."  
Mary Pat Rorabaugh***

***"Disability" per ADA regulations is defined as:***

- a) A physical or mental impairment that substantially limits one or more of the major life activities of such individual
- b) A record of such an impairment
- c) Being regarded as having such an impairment

***"Assistive Technology Device" is defined as "any item, piece of equipment, or product system whether acquired commercially off the shelf, modified or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities."***

***"Assistive Technology Service" means any service that directly assists an individual with a disability in the selection, acquisition, or use of an assistive technology device.***

## Types of Assistive Technology

There are many categories of Assistive Technology and numerous types of devices within each category. Some types of devices are provided and supported through medical plans, some are purchased through special State or Federal programs and some items must be purchased by the consumer, employer or other entity. Sample categories are:

Adaptive keyboards  
Adaptive mice  
Adapted Telephones  
Amplification Devices  
Braille Embossers  
Communication Devices  
Daily Living Aids


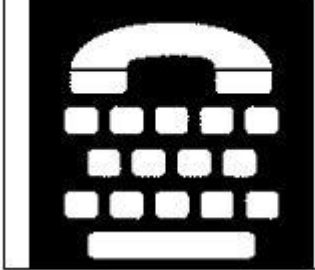
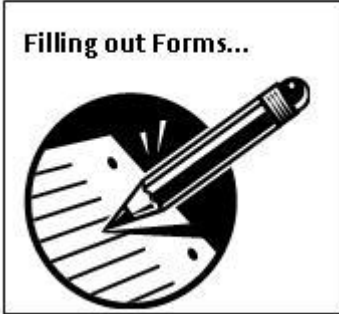

Ergonomic Seating  
Electronic Note-taking Devices  
Environmental Controls  
Low Vision Aids  
Orthotics  
Prosthetics  
Refreshable Braille Displays

Screen Magnification Software  
Screen reading Software  
Speech Input Software  
Word Prediction Software  
Wheelchairs, Scooters and other  
Mobility Aids

### **A 10 Step Road to Accommodation Summary**

1. **[Learn about the person and their disability](#)**
2. **[Identify the Need/s](#)**
3. **[Identify Specialists and Support Personnel](#)**
4. **[Conduct a Skill Evaluation and Worksite Assessment](#)**
5. **[Provide Interim Accommodations](#)**
6. **[Identify Funding](#)**
7. **[Purchase Equipment](#)**
8. **[Install, configure and customize equipment](#)**
9. **[Provide Training](#)**
10. **[Provide Follow-up and Follow-Along Services](#)**

# Assistive Technology on the Job

<p>At the Computer...</p> 	<p><b>At The Computer:</b> Computers may be modified to accommodate many types of disabilities. Persons who are blind or visually impaired may use screen magnification software, alternative display settings, speech output or a refreshable Braille display (which can completely take the place of the monitor). Persons who are unable to type due to physical limitations may use alternative keyboards, alternative mice or speech recognition. Arizona has a number of assistive technology labs in centers throughout the state that specialize in accommodation options for the computer. See Resource Listings.</p>
<p>On the Phone...</p> 	<p><b>On The Phone:</b> Persons who are deaf or hard of hearing may require special modifications to their telephone or alternative phones such as the TTY (text typing phone). The user of a TTY may communicate directly with another user of a TTY by typing messages back and forth, or may use the Arizona Relay Service to support communication between a voice phone and a TTY. For persons who are hard of hearing, telephones are available that amplify and/or enhance sounds, use a visual display for ringing, and if needed, can have large buttons for physical access.</p>
<p>Filling out Forms...</p> 	<p><b>Filling out Forms:</b> Access to paper materials and forms can be a problem for persons with visual issues or physical motor limitations. Individuals with visual impairments may be able to use a device called a Video Magnifier [CCTV], which magnifies text from a paper form (printed text and/or handwriting) onto a video monitor and can be magnified to the preference of the user. An alternative accommodation would be to create electronic forms that can be filled out on the computer. If correctly done, electronic forms may be used by persons who are blind, persons with physical limitations or persons who require alternative colors.</p>
<p>Participating in Meetings...</p> 	<p><b>Participating in Meetings:</b> Participation in meetings can be challenging for persons who are deaf or hard of hearing. Sign language interpreters CAN (Computer Aided Note-taking) specialists or CART (Computer Aided Real Time Translation) specialists may be hired to interpret what is said for meeting participants who are deaf. FM or infrared amplification equipment, sometimes used along with the individual's own personal amplifier and/or hearing aids, can accommodate persons who are hard of hearing. Adequate lighting and direct line of sight are important issues.</p>

## Thoughts and Comments...

*"... accessibility must be well thought out and professionally managed to be successful" ken*

*"... alternative strategies can be as important as adaptive equipment" mike*

*"... assistive technology can make the difference in competitive employment" denise*

# A 10 Step Road to Accommodation

## 1. Learn about the person and their disability

### **Acquiring a Disability that Impacts Your Job:**

Humans tend to go through stages of adjustment for *any* type of change, whether the change is simply job tasks due to the changing nature of some jobs, or a change in the *ability* of the employee to perform job tasks due to the onset of a disability. In many cases, acknowledging the problem is a difficult part of adjusting to and eventually accommodating the disability. For some disabilities, co-workers and family members will be the first to notice (such as gradual hearing loss), in other cases the individual may be struggling with how to manage changes in their abilities (such as progressive vision loss or changing physical motor conditions) and yet in other cases, the acquisition of the disability may be global and instant (such as an employee returning to work after catastrophic injury). In any case, the more open the employee, the employer, and the circle of workers around that person are to the possibility of seeing that person successfully completing tasks in new and different ways, the more likely accommodations will be found.

For the persons themselves, information about how to manage their newly acquired or newly developing disability may seem fragmented or absent. It is common for doctors to know the medical aspects of the disability and not know how to appropriately refer for functional living training or assistive technology supports. There are best practice models for the delivery of assistive technology services that only a small number of assistive technology specialists are actually aware of. For this reason, identifying pieces of the accommodation puzzle often becomes more of an ongoing quest than the simple provision of adaptive equipment.

### **Hiring persons with disabilities:**

Hiring a person with an existing disability is slightly different than accommodating a disability acquired by an existing employee. Many persons who have managed their disability for a long time will already know which accommodations they require to perform the job. Some individuals may be clients of Vocational Rehabilitation Services who can help to provide necessary training and support services to help the person become successful on the job. For the most part, the employer should be able to expect that the person's own adjustment to their disability has already be addressed when hiring a person with an existing disability.

## Resources

There are many excellent Internet and other resources to learn about the functional limitations and implications of specific disabilities. It is helpful for the employer to understand the disability as much as possible to then understand recommended accommodations. It may be helpful to do a search on the person's actual diagnosis. Primary resources are listed on the last pages of this document.

## 2. Identify Need/s

What type of specific tasks do you plan to have your employee do?? How are the tasks typically performed?? What types of technology are being used in the workplace that may be readily customized for the employee?? What problems is the person currently experiencing on the job?? A thorough listing of tasks and barriers is imperative to the accommodation process.

## 3. Identify All Specialists and Support Personnel

**The Team Approach** The best way to pursue accommodation at a job is to take a team approach. Keep communicating!! The basic members of the accommodation team are the employee, the supervisor, the Assistive

Technology (AT) specialist/s, the office Technology Specialist, but the team may also include a job coach, job developer, Vocational Rehabilitation Counselor, or other specialists specific to the person's disability. In some cases, key persons who impact the success of that employee are not aware that they are part of a team, so communication is essential! The roles of primary team members are as follows:

**The Employee:** As an expert member of the team, your employee knows details of their own disability, how they manage their disability, and how it impacts job performance. They may not know the latest technology to support them in their job or how existing technology might be adapted for use in the workplace. It is not unusual for persons with disabilities to be problem solvers by nature, which is a critical component of the accommodation process.

**AT Specialists:** There may be numerous AT Specialists serving the employee at the worksite. Many disabilities have a medical aspect and a functional aspect so different teams of specialists may be involved. In most cases the medical aspects need to be addressed to a stable level before other accommodations can be applied. As an example, a person who is legally blind should have a low vision evaluation done by a physician who is a low vision specialist *before* a computer evaluation is done by the AT Specialist. This is because prescriptive lenses and magnification devices may significantly impact other technology the person will require.

**IT Specialists:** The Assistive Technology Specialists referenced above, will need to work closely with the local IT or MIS specialist at the employee's worksite. Adapted computer access is only possible when the adaptive software or hardware correctly works with actual software and hardware required to do the job. Mainframe access is particularly tricky to achieve for adapted systems. It is extremely important that the local LAN, WAN or network administrator be an active participant in the evaluation and the accommodation process. It is not unusual for adaptive software to conflict with specific versions of standard productivity software. The AT specialist and IT specialist can best solve such problems together.

## **4. Conduct a Skill Evaluation and a Worksite Assessment**

Successful accommodations are generally outcomes of addressing the following specific areas in the worksite assessment: 1. accurate evaluation of the skills of the employee 2. accurate identification of tasks, communication flow, equipment used, and expectations at the workplace 3. accurate assessment of the environment, depending on the specific disability of the employee 4. skilled assistive technology specialists along with the team members identified above, working together to address specific barriers 5. a willingness on the part of the employee to learn and do things differently than co-workers and differently than they may have done in the past, and finally, 6. support from superiors.

## **5. Provide Interim Accommodations**

There are many things that can and should be done while waiting for accommodations to be implemented. This may include borrowing or renting equipment such as adjustable height tables for persons with precise desk height needs or renting or borrowing a CCTV to magnify forms for someone with a visual impairment. The employee with their supervisor and other members of the team should brainstorm appropriate interim accommodations.

## **6. Identify Funding**

**ADA/the employer:** the employer, under ADA, may be required to purchase accommodation/s for an employee. There are tax incentives and other supports available for employers requiring such supports for employees.

**Vocational Rehabilitation (VR):** 1. can consult on Assistive Technology (AT) for employees who are VR clients; 2. can purchase AT for employees if a) they are also VR clients and b) the AT is for the personal use of the employee and is portable (can be used for client's next job) or 3. VR can modify workstations under terms of an MOU if the employer intends to use the workstation to provide employment for other VR clients if/when the current employee leaves

**Private Grants:** some companies can petition private funding sources to assist with the costs of accommodations.

**Consumer Grants:** some benevolent organizations offer possibilities for funding assistive technology for consumers. Generally economic need is a requirement.

**Medical plan:** medical plans including AHCCCS and Medicaid should purchase items required for medical necessity such as wheelchairs, hearing aids, mobility aids, augmentative communication devices, eyeglasses (under some plans), prosthetics (artificial arms or legs), orthotics (walkers, braces) and other medically needed devices.

**Tax deductions:** some equipment purchases qualify as tax deductions for the individual.

**Low Interest loan projects:** In Arizona, call **AzTAP** for status of this project **602-728-9534**

## **7. Purchase Equipment**

Once the Workstation Evaluation is completed and recommendations are made, equipment purchases can be pursued. Most often a selection of recommended vendors is provided with the Workstation Evaluation report. Sometimes other issues need to be considered:

**Accuracy in making the purchase:** when making an assistive technology purchase, even for more “ordinary” appearing items such as pens or ergonomic chairs, it is important to transcribe exactly what was recommended by the assistive technology evaluator down to the version number of software products, make or model of the adaptive device, and table height range of furniture. This will minimize equipment conflicts when installation takes place. The employee needs that specification for a reason and will often not have their needs met with approximations.

**Procurement Issues:** government and large companies frequently use procurement contracts to purchase items such as computers, furniture, and other large investments. Assistive technology software and hardware can be purchased from manufacturers and added to a computer system OR they may be purchased as part of a “Turnkey System” which includes a compatible computer and whatever assistive technology supports are recommended. In either case, it is imperative to make the purchase based on precise specifications from the Workstation Evaluation.

**Cost:** Remember that the accommodation that works is the best investment!

## **8. Install, Configure and Customize equipment**

**Local AT Specialists:** no matter what the size of your company or agency technology department, it is recommended that the local assistive technology specialist be hired to complete software installation or furniture fitting together with the in-house staff. In the case of adaptive software there are many custom settings that the assistive technology products require for them to work properly. In the case of screen reading software for the blind and speech input products for persons with physical limitations, custom scripts might need to be created to allow the employee to be efficient on the job.

**Cautions about calling it done!** Most people want the installation and configuration process to be a one-visit event. This is often not the case. The employee along with in-house technology staff and consultant AT staff should bring their calendars to the installation to schedule a joint follow-up visit.

## **9. Provide Training**

If an employee has not used adaptive software, they will need to learn to use at least 3 products in very different ways than their co-workers. These products are: the operating system (i.e. Windows), the application software used for the job (i.e. word processor or mainframe program) and finally, the adaptive software for their disability (i.e. screen reading software for persons who are blind, screen magnification software for persons who are visually impaired or voice recognition software for persons with physical access limitations or other). Appropriate training is often the piece that makes the accommodation work. This training needs to be provided by a local assistive technology specialist who knows product being used and the disability implications of the employee. Typical rates for assistive technology training are \$46 to \$80 per hour. Often a base of 20 hours of training is recommended.

## 10. Provide Follow-up / Follow-along

**Just Do It!** It is essential to provide Follow-up/Follow-along supports after accommodations have been implemented. It is also advisable to document all custom configurations at the workstation and update the document with ongoing installations, training, and overall use of equipment. Documenting configurations, versions, etc. will save substantial time and funding in case of equipment failures. The end user, along with the AT Team, will in the course of training, come up with additional strategies or ideas that could help to make their work more effective and productive.

**Big Implications for seemingly small changes** If, after the assistive technology services are completed, work needs to be done at that workstation, additional assistive technology follow-up may be required. For example, computer upgrades or software additions can create new conflicts with the adaptive products if the office technology person is unaware of settings and work that was done by previous AT staff. The employee will often only know that their system does not work. Many products for the blind and vision impaired are sensitive to screen resolution settings, view settings, display settings and shortcut key conflicts with application programs. Voice recognition products are sensitive to the sound environment of the office, sound card changes and microphone stability. Contact the local AT provider when problems occur.

### **ASSISTIVE TECHNOLOGY RESOURCES**

#### **Disability Information**

[www.disability.gov](http://www.disability.gov)

[www.askjan.org](http://www.askjan.org)

#### **Blindness/Visual Impairments**

[www.afb.org](http://www.afb.org)

[www.nfb.org](http://www.nfb.org)

[www.askjan.org/media/visi.htm](http://www.askjan.org/media/visi.htm)

[www.azdes.gov/rsa/sbvid](http://www.azdes.gov/rsa/sbvid)

[Resource Directory for Persons Who are Blind, Visually Impaired, and or Deaf](#)

Or call: 602-266-9286 to request a print or Braille Resource Directory

#### **Deaf/Hard of Hearing**

[www.agbell.org](http://www.agbell.org)

[www.asha.org](http://www.asha.org)

[acdhh.org](http://acdhh.org)

[www.deaf.com](http://www.deaf.com)

[www.gallaudet.edu](http://www.gallaudet.edu)

#### **Ergonomic and Physical Challenges**

[www.askjan.org/media/atoz.htm](http://www.askjan.org/media/atoz.htm) (**Musculoskeletal and Connective Tissue** or **Neurological**)

[www.azheadspine.org/spinal.html](http://www.azheadspine.org/spinal.html)

[www.spinalcord.org](http://www.spinalcord.org)

[www.newmobility.com](http://www.newmobility.com)

[www.ninds.nih.gov/disorders/carpal\\_tunnel](http://www.ninds.nih.gov/disorders/carpal_tunnel)

### **Developmental Disabilities and ADD/ADHD**

[www.azdes.gov/ddd](http://www.azdes.gov/ddd)

[www.acf.hhs.gov/programs/add/](http://www.acf.hhs.gov/programs/add/)

### **Adaptive Driving**

[www.nmeda.com](http://www.nmeda.com)

## **Assistive Technology Information**

### **Job Accommodation Network:**

Disability Information; Accommodation Ideas; Resource materials

[www.askjan.org](http://www.askjan.org)

### **Assistive Technology Industry Association:**

An organization of manufacturers, sellers and providers of AT devices and services

[www.atia.org](http://www.atia.org)

### **CSUN - California State University Northridge:**

International AT conference; AT Certificate (ATACP)

[www.csun.edu/cod/conference](http://www.csun.edu/cod/conference)

### **Rehabilitation Engineering and Assistive Technology Society of North America:**

AT Credentialing; research; conferences; certified provider lists by state

[www.resna.org](http://www.resna.org)

### **Alliance for Technology Access:**

Network of AT Resource Centers, Developers and Vendors, Affiliates, and Associates

[www.ataccess.org](http://www.ataccess.org)

### **Closing The Gap:**

International AT conference; AT forums; AT database; newsletter

[www.closingthegap.com](http://www.closingthegap.com)

### **Assistive Technology Industry Association:**

International AT conference; AT Manufacturers and Retailers; Resources; links

[www.atia.org](http://www.atia.org)



**AbleData:**

Assistive technology database and information

[www.abledata.com](http://www.abledata.com)

**Trace Center:**

Assistive technology research; website and electronic accessibility discussions

[trace.wisc.edu](http://trace.wisc.edu)

**US Access Board:**

ADA Building guidelines Section 508 Guidelines

[www.access-board.gov](http://www.access-board.gov)

**Justice Department and ADA Civil Rights:**

Federal ADA website:

[www.ada.gov/](http://www.ada.gov/)

EEOC: Equal Employment Opportunity Commission: Follow ADA links

[www.eeoc.gov](http://www.eeoc.gov)

Arizona information:

[www.ATarizona.com](http://www.ATarizona.com)

[www.acdl.com](http://www.acdl.com)

**Arizona Assistive Technology Resources**

**Statewide Assistive Technology Arizona Tech Act Project:**

**AzTAP: Arizona Technology Access Program**

**Phone: 602-728-9532**

**TTY: 602-728-9536**

**Toll Free: 800-477-9921**

[www.aztap.org](http://www.aztap.org)

**ARSA Sponsored:** [www.ATarizona.com](http://www.ATarizona.com)

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**Central Arizona**

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**Arizona Center for the Blind and Visually Impaired**

Phone: 602-273-7411 [www.acbvi.org](http://www.acbvi.org)

Serves all disability areas; all ages; statewide; equipment loan; assessments; training

## **Foundation for Blind Children and Adults**

Phone: 602-331-1470 [www.seeitourway.org](http://www.seeitourway.org)

Serves persons who are blind or visually impaired; all ages; equipment loan; assessments; training; equipment sale

## **UCP of Southern Arizona**

Phone: 602-943-5472 [www.ucpofcentralaz.org](http://www.ucpofcentralaz.org)

Serves persons with physical needs, all ages; ergonomics evals, ergo seating, high tech wheelchair evals; OT assessments; Ergo/physical training

## **Valley Center of the Deaf and Hard of Hearing**

Voice/TTY: 602-267-1921 [www.vcdaz.org](http://www.vcdaz.org)

Serves persons who are deaf or hard of hearing; equipment lab; equip loan

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## **Southern Arizona**

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### **Technology Access Center of Tucson**

Phone: 520-745-5588 x 1265

Serves all disability areas; all ages; southern AZ; equipment loan; assessments; training

### **Southern Arizona Assoc for the Visually Impaired**

Phone: 520-795-1331 [www.saavi.us](http://www.saavi.us)

Serves persons who are blind or visually impaired

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## **Northern Arizona**

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### **Assistive Technology Center of Flagstaff**

Phone: 928-523-5878 [www4.nau.edu/ihd/AT/ATCenter.asp](http://www4.nau.edu/ihd/AT/ATCenter.asp)

Serves all disability areas; all ages; statewide; equipment loan; assessments; training

### **ASSIST! To Independence**

Phone: 928-283-6290

"Helping American Indians with differing disabilities live in harmony"

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## **Keyword searches for local AT Information:**

### **Blind/Vision Impaired:**

"Blind Services" "Magnifying Glasses" "Eyeglasses and Eye Care"

### **Deaf/Hard of Hearing:**

"Hearing Aids and Assistive Devices" "Audiologists" "Deaf Services"

### **Wheelchairs, Scooters and Mobility Aids:**

"Medical" "Wheelchair Lifts & Ramps" "Wheelchair and Scooters"

**Ergonomics and Physical Considerations:** "Van Conversations and Accessories" "Handicapped Equipment, Supplies and Services" "Medical" "Wheelchair Lifts and Ramps" "Wheelchair and Scooters"

**Driving Aids:**

"Van Conversations and Accessories" "Handicapped Equipment, Supplies and Services"

**EXCELLENT AT CATALOGS ("Must Have...")**

**(but be sure to consult with AT Specialists for additional information or training tips!)**

**Independent Living Aids** 800-537-2118 [www.independentliving.com](http://www.independentliving.com)

**Enablemart** 888-640-1999 [www.enablemart.com](http://www.enablemart.com)

**Harris Communications** V: 800-825-6758 TTY: 800-825-9187 [www.harriscomm.com](http://www.harriscomm.com)

**HITEC Group International** V/TTY: 800-288-8303 [www.hitec.com](http://www.hitec.com)

**Sammon Preston** 800-323-5547 [www.sammonspreston.com](http://www.sammonspreston.com)

**Options from Infogrip** 800-397-0921 [www.infogrip.com](http://www.infogrip.com)

**Active Forever** 800-377-8033 [www.activeforever.com](http://www.activeforever.com)

Under Titles VI and VII of the Civil Rights Act of 1964 (Title VI & VII), and the Americans with Disabilities Act of 1990 (ADA), Section 504 of the Rehabilitation Act of 1973, and the Age Discrimination Act of 1975, the Department prohibits discrimination in admissions, programs, services, activities, or employment based on race, color, religion, sex, national origin, age, and disability. The Department must make a reasonable accommodation to allow a person with a disability to take part in a program, service or activity. For example, this means if necessary, the Department must provide sign language interpreters for people who are deaf, a wheelchair accessible location, or enlarged print materials. It also means that the Department will take any other reasonable action that allows you to take part in and understand a program or activity, including making reasonable changes to an activity. If you believe that you will not be able to understand or take part in a program or activity because of your disability, please let us know of your disability needs in advance if at all possible. Please do so by calling or contacting a DES/ADA Liaison.

**For additional information about this publication contact:**

**State of Arizona  
Department of Economic Security  
Rehabilitation Services Administration  
1789 West Jefferson 930A  
Phoenix, Arizona 85007  
Phone: 602-542-3332  
TTY: 602-542-6049**

**[www.azdes.gov/rsa](http://www.azdes.gov/rsa)**

**For Alternative Format contact the number above**

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